FILE 'REGISTRY' ENTERED AT 09:18:17 ON 12 APR 2006

=> S CELLULASE/CN
L1 1 CELLULASE/CN

=> D

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 9012-54-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Cellulase (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN β-1,4-D-Endoglucanase
CN β-1,4-Endoglucan hydrolase
CN β-1,4-Glucanase
CN β-1,4-Glycanase
CN 1,4-β-D-Endoglucanase
CN 1,4-β-D-Glucan 4-glucanohydrolase
CN 1,4-β-D-Glucan endoglucanase
CN 1,4-β-Glycanase
CN 23: PN: DE102004041717 FIGURE: 4 claimed sequence
CN 800NSK
CN Acidic Cellulase AE202
CN Acremozyme
CN Alkali cellulase
CN AUS 0301
CN Auxilase
CN Avicelase
CN Avicelase I
CN Bactosol CA
CN Bactosol JA
CN Bactosol JN
CN Beizym UL
CN Biocellulase
CN Biocellulase A
CN Biocellulase AZ
CN Biocellulase ZK
CN Biosoft
CN Biostar DJ New
CN Biotouch C 25
CN Biotouch L
CN Carezyme
CN Carezyme 1000L
CN Carezyme 4500L
CN Cartazyme MCX
CN Cattle-Ase C
CN Cattle-Ase HR
CN Cease
CN Cellodextrinase
CN Cellosoft Conc. L
CN Celloviridine
CN Cellsoft L
CN Celluclast
CN Celluclast 1.5L
CN Celluclast 1.5LFG
CN Celluclast 2.0L
CN Celluclast 250L
CN Celluclast 2L
CN Cellulase 2322
CN Cellulase 4000
CN Cellulase A
CN Cellulase A 3

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY

DR 9037-40-5, 145172-25-4, 143296-48-4, 152443-09-9, 149718-64-9, 160995-61-9, 179530-34-8, 214975-89-0

MF Unspecified

CI COM, MAN

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

15472 REFERENCES IN FILE CA (1907 TO DATE)
205 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
15496 REFERENCES IN FILE CAPLUS (1907 TO DATE)

FILE 'CAPLUS' ENTERED AT 09:18:33 ON 12 APR 2006

=> S L1;S CELLULASE;S L2,L3;S MELANOCARPUS;S ALBOMYCES
L2 15498 L1

18270 CELLULASE
3757 CELLULASES
L3 18908 CELLULASE
(CELLULASE OR CELLULASES)

L4 20142 (L2 OR L3)

L5 59 MELANOCARPUS

L6 65 ALBOMYCES

=> S L4 AND L5
L7 22 L4 AND L5

=> S L5(W)L6
L8 41 L5(W)L6

=> S L8 AND L4
L9 15 L8 AND L4

=> D L7 1-22 CBIB ABS

L7 ANSWER 1 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2006:282735 Regulation of **cellulase** production in two thermophilic fungi **Melanocarpus** sp. MTCC 3922 and Scytalidium thermophilum MTCC 4520. Kaur, Jatinder; Chadha, Bhupinder S.; Saini, Harvinder S. (Department of Microbiology, Guru Nanak Dev University, Amritsar, Punjab, 143005, India). Enzyme and Microbial Technology, 38(7), 931-936 (English) 2006. CODEN: EMTED2. ISSN: 0141-0229. Publisher: Elsevier B.V..

AB This paper reports regulation of **cellulase** production in two thermophilic fungi, **Melanocarpus** sp. MTCC 3922 and Scytalidium thermophilum MTCC 4520. The expression of endoglucanase (EG), avicel adsorbable endoglucanase (AAEG) and β-glucosidase in both fungi was inducible. Of the different carbon sources tested, rice straw induced maximal levels of **cellulase** in both fungi. While, the addition of fructose (1%, w/v) to the CM-cellulose (CMC) medium resulted in two-fold increase in endoglucanase production in **Melanocarpus** sp., however, the addition of ethanol (1%, volume/volume) resulted in eight-fold-increased expression of endoglucanase in S. thermophilum. The expression profiles of different components of **cellulase** complex were shown to be co-regulated in S. thermophilum but independently regulated in **Melanocarpus** sp.

L7 ANSWER 2 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2006:162014 Optimization of Medium Components for Production of **Cellulases** by **Melanocarpus** sp. MTCC 3922 under Solid-state Fermentation. Jatinder, K.; Chadha, B. S.; Saini, H. S. (Department of Microbiology, Guru Nanak Dev University, Amritsar, 143 005, India). World Journal of Microbiology & Biotechnology, 22(1), 15-22 (English) 2006. CODEN: WJMBEY. ISSN: 0959-3993. Publisher: Springer.

AB The medium components for the production of extracellular **cellulases** by **Melanocarpus** sp. MTCC 3922 were optimized using solid-state fermentation **Melanocarpus** sp. cultured in optimized medium containing 1.5% urea, and 0.12% KH2PO4 along with a trace element solution and surfactant (Tween 20), produced endoglucanase (142.4 U/g of substrate), Avicel-adsorbable endoglucanase (27.0 U/g of substrate), Avicelase (0.65 U/ g of substrate), FPase (39.9 U/g of substrate) and β-glucosidase (109.0 U/g of substrate) activities. The presence of sulfate ions in traces stimulated endoglucanase yields. The IEF fractionation of the crude proteins from **Melanocarpus** sp. showed the expression of 3, 1 and 11 isoforms of endoglucanase, β-glucosidase and xylanase, resp.

L7 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2005:544573 Document No. 143:284792 Sorghum straw for xylanase hyper-production by Thermomyces lanuginosus (D2W3) under solid-state fermentation. Sonia, K. G.; Chadha, B. S.; Saini, H. S. (Department of Microbiology, Guru Nanak Dev University, Amritsar, 143 005, India). Bioresource Technology, 96(14), 1561-1569 (English) 2005. CODEN: BIRTEB. ISSN: 0960-8524. Publisher: Elsevier B.V..

AB This paper reports the production of very high levels of **cellulase** free xylanase and associated hemicellulases by an indigenous thermophilic isolate of Thermomyces lanuginosus (D2W3) using solid-state fermentation Sorghum straw, an inexpensive and abundant source of carbon supported maximal xylanase activity (11,855 units/g dry substrate). Culturing T. lanuginosus D2W3 on sorghum straw and optimizing other culture conditions (media types, particle size of carbon source, inoculum level, inoculum age and additives), yielded increased levels of xylanase (39,726 units/g dry substrate). Further optimization of enzyme production was carried out using Box-Behnken design of expts. with three independent variables (inoculum level, glycerol and ammonium sulfate concns.) which resulted in very high levels of xylanase, 48,000 ± 1774 units/g dry substrate, and 2.6 ± 0.2, 13.4 ± 0.56, 68 ± 1.7, 1.4 ± 0.08, 1.2 ± 0.05 (units/g dry substrate) of β-xylosidase, α-galactosidase, pectinase, β-mannosidase and α-L-arabinofuranosidase, resp.

L7 ANSWER 4 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2005:71806 Document No. 143:320989 Trichoderma reesei strains for production of **cellulases** for the textile industry. Miettinen-Oinonen, Arja (VTT Biotechnology, FIN-02044, Finland). VTT Publications, 550, 1-96, I/1-I/9, II/1-II/25, III/1-III/10, IV/1-IV/9 (English) 2004. CODEN: VTTPEY. ISSN: 1235-0621. Publisher: Valtion Teknillinen Tutkimuskeskus.

AB Trichoderma reesei is a biotechnically important filamentous fungus used com. in enzyme production T. reesei is also one of the best known cellulolytic organisms, producing readily and in large quantities a complete set of extracellular **cellulases** for the degradation of crystalline cellulose. In addition to T. reesei, a wide variety of other bacteria and fungi also produce cellulolytic enzymes. **Cellulases** originating from various organisms and having different characteristics are used industrially in many applications, such as in the textile industry in finishing of denim fabric to impart a stonewashed appearance (biostoning) and in biofinishing of cotton. In this work T. reesei strains producing significant amts. of homologous and heterologous **cellulases** and having defined **cellulase** profiles were constructed for specific industrial applications, i.e. biostoning and biofinishing of cotton. The production of T. reesei endoglucanase II (EGII), cellobiohydrolases I and II (CBHI and CBHII) was improved in sep. strains. Strains producing high amts. of EGI and EGII without CBHs or CBHI and CBHII without the main EGs were also constructed. The **cellulase** genes were expressed under the powerful T. reesei cbh1 promoter; in a transformant overproducing both CBHI and CBHII, the cbh2 promoter was also used for cbh2 expression. The level of endoglucanase activity produced by the EGII-overproducing transformants correlated with the copy number of the egl2 expression cassette. Production of the major secreted **cellulase** CBHI was increased up to 1.5-fold and production of CBHII fourfold compared with the parent strain. In transformants overproducing both CBHI and CBHII, production of CBHI was increased up to 1.6-fold and production of CBHII up to 3.4-fold as compared with the host strain and approx. similar amts. of CBHII protein were produced by using the cbh1 or cbh2 promoters. The enzyme preparation with elevated EGII content most clearly improved the biostoning of denim fabric and the biofinishing of cotton fabric. Better depilling and visual appearance were achieved with the enzyme preparation having an elevated CBHII content compared to the wild type preparation in biofinishing of cotton, but the improvement was not as pronounced as in the case of the EGII preparation Novel neutral **cellulases** were demonstrated to have potential in biostoning. The **cellulase** preparation of the thermophilic fungus **Melanocarpus** albomyces was found to be effective in releasing dye from indigo-dyed denim and to cause low backstaining at neutral pH. M. albomyces produces at least three **cellulases** and these **cellulases** with an effect on biostoning were purified and the genes encoding them were cloned and sequenced. Ma 20 kDa EGV (Ma Cel45A) belongs to the glycosyl hydrolase family 45 and the 50 kDa EGI (Ma Cel7A) and CBHI (Ma Cel7B) to family 7. None of the **cellulases** harbours a cellulose binding domain. Especially purified Ma Cel45A performed well in biostoning. The Ma **cellulases** were produced in T. reesei under the T. reesei cbh1 promoter for biostoning applications. The endoglucanase production levels of Ma cel45A- and cel7A-transformants were several times higher than those of the parental M. albomyces strain. The **cellulase** preparation produced by the recombinant Ma cel45A transformant performed well at neutral pH in the finishing of denim fabric and caused considerably less backstaining than the acid **cellulase** product of T. reesei.

L7 ANSWER 5 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2004:829271 Document No. 141:309518 Laccase from **Melanocarpus** albomyces binds effectively to cellulose. Kiiskinen, Laura-Leena; Palonen, Hetti; Linder, Markus; Viikari, Liisa; Kruus, Kristiina (VTT Biotechnology, 02044 VTT, Finland). FEBS Lett., 576(1-2), 251-255 (English) 2004. CODEN: FEBLAL. ISSN: 0014-5793. Publisher: Elsevier B.V..

AB Laccase (I) from the thermophilic fungus, M. albomyces, was shown to bind to softwood and pure microcryst. cellulose. The binding isotherm fit well the Langmuir type 1-site binding model. The adsorption parameters indicated that M. albomyces I bound with high affinity to cellulose with a relatively low maximum binding capacity, as compared to the values for various **cellulases.** The binding was shown to be reversible and not influenced by nonspecific protein or 0.1-0.5M Na2SO4. No binding was detected with I from Trametes hirsuta or Mauginiella sp., which suggests that binding to cellulose is typical for only some I enzymes.

L7 ANSWER 6 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2004:468408 Document No. 142:200314 Role of lignin in the enzymatic hydrolysis of lignocellulose. Palonen, Hetti (VTT Biotechnology, Finland). VTT Publications, 520, 1-80, I/1-I/5, II/1-II/8, III/1-III/17, IV/1-IV/9, V/1-V/23 (English) 2004. CODEN: VTTPEY. ISSN: 1235-0621. Publisher: Valtion Teknillinen Tutkimuskeskus.

AB Characterization, understanding and overcoming barriers of enzymic hydrolysis of different raw materials is essential for the development of economically competitive processes based on enzymic treatments. This work focused on factors relevant for the improvement of enzymic hydrolysis of lignocellulose raw materials derived from softwood. The major interest of the work was in lignin. Specific areas addressed were the role of lignin in the unproductive binding of **cellulases**, which restricts the hydrolysis of cellulose, and enzymic modification of lignin in order to improve cellulose hydrolysis. In addition, suitability a new pretreatment method, wet oxidation, was evaluated for softwood. The binding of Trichoderma reesei CBH I and CBH II enzymes on bacterial microcryst. cellulose (BMCC) was shown to be determined by a co-operative effect of the two domains, the cellulose binding domain (CBD) and the catalytic domain (CD). Binding of the intact CBH I on bacterial microcryst. cellulose (BMCC) was fully reversible, while the binding of CBH II was only partly reversible. The **cellulases** CBH I and EG II were adsorbed on steam pretreated softwood (SPS) and lignin. The observation that the presence of CBD clearly enhanced the binding of the enzymes on SPS and especially on lignin, suggests that unspecific adsorption is dominated by the affinity of the CBD. The wet oxidation pretreatment studies gave information on the importance of substrate structure in the enzymic hydrolysis. This pretreatment method was applied to softwood for the first time. In the wet oxidation pretreatment studies, the total recovery of carbohydrates was high and the recovery of cellulose even higher than what has been reported for steam pretreated softwood. Lignin fraction of the substrate remained mainly undissolved. No clear correlation between the hydrolysis yield and lignin content could be observed It was concluded that the location and chemical/phys. structure of lignin affected the enzymic hydrolysis more than the absolute amount of lignin. It was shown that the hydrolysis result could be improved by optimizing the pretreatment conditions, reducing the hemicellulose content or hydrolyzing the residual hemicellulose by selecting a suitable combination of enzymes. This study showed for the first time that enzymic modification and/or removal of lignin can be combined with simultaneous cellulose hydrolysis. Both the modification of lignin surfaces by oxidative treatments with laccase alone and delignification treatment with a laccase-mediator system lead to increased hydrolysis of lignocellulose. Oxidation of lignin by laccase was achieved by the three laccases tested, produced by Trametes hirsuta, **Melanocarpus** albomyces and Mauginiella sp. The new laccase isolated and purified from Mauginiella sp. had enzymic characteristics similar to many basidiomycete laccases. Different adsorption of the three laccases onto SPS did not correlate with the capability of the laccases to oxidize the substrate and consequently, to improve lignocellulose hydrolysis.

L7 ANSWER 7 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2004:301488 Document No. 141:367324 Three **cellulases** from **Melanocarpus** albomyces for textile treatment at neutral pH. [Erratum to document cited in CA140:392276]. Miettinen-Oinonen, Arja; Londesborough, John; Joutsjoki, Vesa; Lantto, Raija; Vehmaanpera, Jari (Research and Development, Primalco Ltd. Biotec, Rajamaki, Finland). Enzyme and Microbial Technology, 34(6), 624 (English) 2004. CODEN: EMTED2. ISSN: 0141-0229. Publisher: Elsevier.

AB The author affiliations should have been R&D of Primalco Ltd. Biotec, Roal Oy, Rajamaki, Finland. The present address of Arja Miettinen-Oinonen, John Londesborough, and Raija Lantto are presently is VTT Biotechnology, Espoo, Finland. The present address of Vesa Joutsjoki is MTT Agrifood REsearch Finland, Jokioinen, Finland. The present address of Jari Vehmaanpera is Roal Oy, Rajamaki, Finland.

L7 ANSWER 8 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2004:111472 Document No. 140:392276 Three **cellulases** from **Melanocarpus** albomyces for textile treatment at neutral pH. Miettinen-Oinonen, Arja; Londesborough, John; Joutsjoki, Vesa; Lantto, Raija; Vehmaanpera, Jari (VTT Biotechnology, Espoo, FIN-02044 VTT, Finland). Enzyme and Microbial Technology, 34(3-4), 332-341 (English) 2004. CODEN: EMTED2. ISSN: 0141-0229. Publisher: Elsevier Science.

AB Culture supernatants from strains of **Melanocarpus** albomyces, Myceliophthora thermophila, Chaetomium thermophilum, and Sporotrichum thermophilum were tested for their ability to release dye in neutral pH conditions from indigo-dyed cotton-containing fabric in biostoning applications. The supernatants from M. albomyces worked well in biostoning, with low backstaining. Three **cellulases** were purified to homogeneity from the culture medium of this species. Two of the **cellulases** were endoglucanases with apparent mol. masses of 20 and 50 kDa. The 20 kDa endoglucanase was a relatively heat-stable **cellulase** with high pH optimum. The partially purified enzyme crystallized spontaneously at pH 4.0 and 7°. The 50 kDa endoglucanase also had activity against 4-methylumbelliferyl-β-d-lactoside (MUL) and was active over a wide range of pH values. The third purified **cellulase** was the 50 kDa cellobiohydrolase with low MUL activity at acidic pH and detectable activity towards filter paper and acid swollen Solca Floc-cellulose, but no endoglucanase activity. The purified 20 kDa endoglucanase performed well in biostoning of denim fabric at neutral pH. Addition of the purified 50 kDa endoglucanase or the 50 kDa cellobiohydrolase to the 20 kDa endoglucanase decreased backstaining in biostoning.

L7 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2004:8987 Document No. 140:230263 Cloning of **cellulase** genes from **Melanocarpus** albomyces and their efficient expression in Trichoderma reesei. Haakana, Heli; Miettinen-Oinonen, Arja; Joutsjoki, Vesa; Mantyla, Arja; Suominen, Pirkko; Vehmaanpera, Jari (Primalco Ltd. Biotec, Rajamaki, Finland). Enzyme and Microbial Technology, 34(2), 159-167 (English) 2004. CODEN: EMTED2. ISSN: 0141-0229. Publisher: Elsevier Science.

AB In our previous study, three purified **cellulases** of **Melanocarpus** albomyces proved to be effective in biostoning application at neutral pH [Enzyme Microb. Technol., accepted for publication]. We cloned and sequenced three genes of M. albomyces, which encode a 20 kDa and two 50-kDa polypeptides. The 20-kDa protein (Cel45A) and one of the 50-kDa proteins (Cel7A) are endoglucanases of the glycosyl hydrolase families 45 and 7, resp. The other 50-kDa protein (Cel7B) is a family 7 cellobiohydrolase. None of the **cellulases** harbors a cellulose binding domain (CBD). These genes were expressed in Trichoderma reesei under the control of the T. reesei cbh1 promoter and the proteins detected in the culture medium. The endoglucanase production levels of the cel45A- and cel7A-transformants were several times higher than those of the parental M. albomyces strain. The sizes of Cel45A, Cel7A and Cel7B proteins produced by the transformants were the same as the sizes of the corresponding proteins purified from M. albomyces. **Cellulase** prepns. produced by the cel45A transformants performed well at neutral pH in stone-washing of denim fabric and caused considerably less back-staining as compared to the acid **cellulase** product of T. reesei.

L7 ANSWER 10 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2003:415224 Document No. 139:175811 Crystal Structure of a Family 45 Endoglucanase from **Melanocarpus** albomyces: Mechanistic Implications Based on the Free and Cellobiose-bound Forms. Hirvonen, Mika; Papageorgiou, Anastassios C. (Turku Centre for Biotechnology, University of Turku and Abo Akademi University, Turku, 20521, Finland). Journal of Molecular Biology, 329(3), 403-410 (English) 2003. CODEN: JMOBAK. ISSN: 0022-2836. Publisher: Elsevier Science Ltd..

AB Cellulose, a polysaccharide of β-1,4-linked d-glucosyl units, is the major component of plant cell walls and one of the most abundant biopolymers in nature. **Cellulases** (cellobiohydrolases and endoglucanases) are enzymes that catalyze the hydrolysis of cellulose to smaller oligosaccharides, a process of paramount importance in biotechnol. The thermophilic fungus **Melanocarpus** albomyces produces a 20-kDa endoglucanase known as 20K-**cellulase** that has been found particularly useful in the textile industry. The crystal structures of free 20K-**cellulase** and its complex with cellobiose have been determined at 2.0 Å resolution The enzyme, classified into the glycoside hydrolase family 45, exhibits the characteristic six-stranded β-barrel found before in Humicola insolens endoglucanase V structure. However, the active site in the 20K-**cellulase** shows a closing of .apprx.2.5-3.5 Å while a mobile loop identified previously in Humicola insolens endoglucanase V and implicated in the catalytic mechanism is well-defined in 20K-**cellulase**. In addition, the crystal structure of the cellobiose complex shows a shift in the cellobiose position at the substrate-binding cleft. It is therefore proposed that these alterations may reflect differences in the binding mechanism and catalytic action of the enzyme.

L7 ANSWER 11 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2003:229784 Document No. 139:129851 Structure of 20K endoglucanase from **Melanocarpus** albomyces at 1.8 Å resolution. Valjakka, Jarkko; Rouvinen, Juha (Department of Chemistry, University of Joensuu, Joensuu, 80101, Finland). Acta Crystallographica, Section D: Biological Crystallography, D59(4), 765-768 (English) 2003. CODEN: ABCRE6. ISSN: 0907-4449. Publisher: Blackwell Munksgaard.

AB The crystal structure of the 20K endoglucanase from the thermophilic fungus **Melanocarpus** albomyces (Ma20k) has been determined The structure was refined to 1.8 Å resolution using data obtained at 120 K. Ma20k belongs to glycoside hydrolase family 45. The three-dimensional structures of endoglucanase V (EGV) from the fungus Humicola insolens and of an endoglucanase from H. Grisea var. thermoidea have previously been determined The overall structure of Ma20k consists of a six-stranded β-barrel domain similar to that found previously in family 45 endoglucanases. The flexible loop between strands V and VI, which was disordered in the uncomplexed structures of the Humicola endoglucanases but was ordered in complexed structures of EGV, is found to be well ordered in the native structure of Ma20k. The structure of Ma20k allows comparison between thermophilic and mesophilic proteins of family 45 and different principles for thermostability are discussed.

L7 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
2002:869494 Document No. 137:365567 Novel neutral **cellulase** genes from **Melanocarpus** albomyces, its recombinant expression and enzymic activity for industrial stonewashing and biofinishing. Miettinen-Oinonen, Arja; Londesborough, John; Vehmaanpera, Jari; Haakana, Heli; Mantyla, Arja; Lantto, Raija; Elovainio, Minna; Joutsjoki, Vesa; Paloheimo, Marja; Suominen, Pirkko (AB Enzymes OY, Finland). U.S. Pat. Appl. Publ. US 2002168751 A1 20021114, 85 pp., Cont.-in-part of U.S. Ser. No. 732,181, abandoned. (English). CODEN: USXXCO. APPLICATION: US 1997-841636 19970430. PRIORITY: US 1996-732181 19961016.

AB Genes encoding novel **cellulases**, and a gene encoding a protein that facilitates the action of such novel **cellulases**, the novel **cellulases** and a protein that facilitates the action of such **cellulases**, and enzyme prepns. containing such proteins are described. The native hosts and the culture medium of said hosts containing said novel **cellulases** are also disclosed. Specifically, genes for three novel **cellulases** named as "20K-**cellulase**", "50K- **cellulase**", and "50K-**cellulase** B" resp., are cloned from **Melanocarpus** albomyces. In addition, a novel gene fragment encoding 34-amino acid peptide with high homol. to the **cellulase** family, herein called "protein-with-CBD" (where CBD means "cellulose binding domain") is also cloned from M. albomyces. The enzymes with mol. wts. of approx. 20 and 50 kilodaltons have mildly acid pH optima and temperature optima of ≥60°.

Purification of the enzymes from **Melanocarpus** albomyces and cloning of the genes are described. Uses of the enzymes in biostoning and biofinishing are demonstrated. It is found that backstaining during biostoning was a function of the enzyme rather than of the pH. The enzyme may be manufactured for use in textile processing, laundry detergents and in pulp and paper processing by cultivation of the microorganism or by expression of the cloned gene in a suitable host.

L7 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2002:794227 Document No. 137:259667 Microbiological controlled mycoculture nutrient substrates. Van der Sterren, Theo; Hendriks, Ger; Lemmers, Geert; Wach, Mark Peter (Neth.). U.S. Pat. Appl. Publ. US 2002151037 A1 20021017, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-779067 20010208.

AB The present invention is directed to the controlled preparation of mycoculture nutrient substrates and in particular, to methods of composting which include the enzymic digestion of substrate via colonization with microbial cultures or enzymes. The method of the present invention also include the colonization of substrate with microbial cultures for conferring increased microbial nitrogen content to such substrate. The present invention is further directed to mushroom substrate produced via the methods described herein.

L7 ANSWER 14 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2002:67440 Document No. 136:321213 Crystallization and preliminary crystallographic analysis of a family 45 endoglucanase from the thermophilic fungus **Melanocarpus** albomyces. Hirvonen, Mika; Papageorgiou, Anastassios C. (University of Turku and Åbo Akademi University, Turku Centre for Biotechnology, Turku, 20521, Finland). Acta Crystallographica, Section D: Biological Crystallography, D58(2), 336-338 (English) 2002. CODEN: ABCRE6. ISSN: 0907-4449. Publisher: Blackwell Munksgaard.

AB M. albomyces 20-kDa **cellulase**/endoglucanase (I) was crystallized I belongs to the family 45 of glycoside hydrolases and has sequence homol. with Humicola insolens **cellulase**/endoglucanase V (II). However, in contrast to II, I does not harbor a cellulose-binding module. Optimization of the crystallization conditions using a PEG/ion combination and microseeding techniques was employed to improve the quality and the size of the crystals. A complete data set to 2.2 Å resolution was collected using synchrotron radiation. Preliminary crystallog. anal. showed that the I crystals belonged to tetragonal space group P41212/P43212, with unit-cell parameters a = 47.3, b = 47.3, c = 177.3 Å, and 1 mol. per asym. unit.

L7 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2001:747923 Document No. 135:290470 Textile care agent containing **cellulase** and a color-fixing agent. Nickel, Dieter; Bianconi, Patrizia; Voelkel, Theodor; Speckmann, Horst-Dieter; Jekel, Maren (Henkel Kommanditgesellschaft auf Aktien, Germany). PCT Int. Appl. WO 2001074982 A1 20011011, 35 pp. DESIGNATED STATES: W: CA, JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (German). CODEN: PIXXD2. APPLICATION: WO 2001-EP3257 20010322. PRIORITY: DE 2000-10015991 20000331.

AB A textile care agent nearly preventing color-bleeding of (especially new) textiles, if it is used in pretreatment, added to common washing agents in the main laundry cycle or in the rinsing process, consists of ≥1 **cellulase** and 0.1-25 weight% of ≥1 color-fixing polymer containing imidazolidine groups, such as Tinofix CL, as well as an (nonionic) emulsifier and preferably water as solvent and optionally further components. The **cellulase** used is 20K-**cellulase** from **Melanocarpus** sp. or Myriococcum sp. (Ecostone) possessing at 50° and pH 4-9 ≥80% of its maximum activity and at pH 10 .apprx.50%, and is added in amts. meeting a cellulolytic activity of 1-500 NCU/g. As greying inhibitors 0.1-10 weight%

anionic or nonionic modified cellulose such as CM-cellulose, Me cellulose, Me hydroxyethyl cellulose, and/or Me hydroxypropyl cellulose may be added. Furthermore, the textile care agent contains 0.05-5 weight% of perfumes with >20% adherent or higher-boiling components and 0.01-5 weight% of an UV-absorbing agent. Thus, a textile care agent consisting of Tinofix CL 5, 20K-**cellulase** 0.05, perfumes 0.5, 1,2-propylene glycol 10, sodium acetate 1, and H2O and emulsifier to 100 weight% leads by regularly use to a lasting freshness of the fibers, a reduced greying and a preservation of the soft touch of the textile surface.

L7 ANSWER 16 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2001:319416 Document No. 134:328232 Enzymic graying inhibitors and laundry detergents containing them. Kottwitz, Beatrix; Maurer, Karl-Heinz (Henkel K.-G.a.a., Germany). Ger. Offen. DE 19952457 A1 20010503, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1999-19952457 19991029.

AB The use from **Melanocarpus** or Myriococcum sp.-derived 20K- **cellulase** or a **cellulase** with >80% homol. thereto is used as a graying inhibitor in laundry detergents. This is especially effective in combination with optional genetically modified protease and/or alkali percarbonate for reducing redeposited dirt particles in laundering. An example using Celluzyme 0.7T was given.

L7 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

2000:56913 Document No. 132:204683 Biochemical properties of xylanases from a thermophilic fungus, **Melanocarpus** albomyces, and their action on plant cell walls. Prabhu, K. Ashok; Maheshwari, Ramesh (Department of Biochemistry, Indian Institute of Science, Bangalore, 560 012, India). Journal of Biosciences (Bangalore, India), 24(4), 461-470 (English) 1999. CODEN: JOBSDN. ISSN: 0250-5991. Publisher: Indian Academy of Sciences.

AB M. albomyces, a thermophilic fungus isolated from compost by enrichment culture in a liquid medium containing sugarcane bagasse, produced **cellulase**-free xylanase in the culture medium. The fungus was unusual in that xylanase activity was inducible not only by hemicellulosic material but also by the monomeric pentosan unit of xylan but not by glucose. Concentration of bagasse-grown culture filtrate protein followed by size-exclusion and anion-exchange chromatog. separated 4 xylanase activities. Under identical conditions of protein purification, xylanase I was absent in the xylose-grown culture filtrate. Two xylanase activities, a minor xylanase IA and a major xylanase IIIA, were purified to apparent homogeneity from bagasse-grown cultures. Both xylanases were specific for 1,4-β-xylose-rich polymer, optimally active, resp., at pH 6.6 and 5.6, and at 65°. The xylanases were stable at pH 5-10 at 50° for 24 h. Xylanases released xylobiose, xylotriose, and higher oligomers from xylans from different sources. Xylanase IA had a mol. weight of 38 kDa and contained 7% carbohydrate, whereas xylanase IIIA had a mol. weight of 24 kDa and no detectable carbohydrate. The Km for larchwood xylan (mg/mL) and Vmax (μmol xylose/min/mg protein) values of xylanase IA were 0.33 and 311, and of xylanase IIIA 1.69 and 500, resp. Xylanases IA, II, and IIIA showed no synergism in the hydrolysis of larchwood glucuronoxylan or oat spelt and sugarcane bagasse arabinoxylans. They had different reactivity on untreated and delignified bagasse. The xylanases were more reactive than **cellulase** on delignified bagasse. Simultaneous treatment of delignified bagasse by xylanase and **cellulase** released more sugar than individual enzyme treatments. By contrast, the primary cell walls of a plant, particularly from the region of elongation, were more susceptible to the action of **cellulase** than xylanase. The effects of xylanase and **cellulase** on plant cell walls were consistent with the view that hemicellulose surrounds cellulose in plant cell walls.

L7 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

1998:388543 Document No. 129:64085 The ACEI and ACEII transcription factors of Trichoderma reesei and their use in the expression of foreign genes in Trichoderma. Saloheimo, Anu; Aro, Nina; Ilmen, Marja; Penttila, Merja

(Rohm Enzyme Finland Oy, Finland; Saloheimo, Anu; Aro, Nina; Ilmen, Marja; Penttila, Merja). PCT Int. Appl. WO 9823642 A1 19980604, 99 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, US, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-FI743 19971201. PRIORITY: US 1996-32156 19961129; US 1996-32959 19961213; US 1997-40140 19970310.

AB A pair of transcription factors, ACEI and ACEII, involved in regulation of the CBHI gene of Trichoderma reesei are identified and the ace1 and ace2 genes encoding them are cloned. The transcription factors and the elements they bind to may be of use in the expression of foreign genes in Trichoderma. CDNAs for these factors were cloned using a yeast reporter gene system to identify clones encoding factors affecting transcription from a promoter of a gene from a filamentous fungus. The proteins encoded by these genes have DNA-binding domains, but do not show any significant sequence similarity to other transcription factors. Expression of the genes in Trichoderma reesei was controlled by the nature and co.

L7 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

1997:381006 Document No. 126:340475 New **cellulases** from fungi for use in pulp and textile processing and the genes encoding the enzymes. Miettinen-Oinonen, Arja; Londesborough, John; Vehmaanperae, Jari; Haakana, Heli; Maentylae, Arja; Lantto, Raija; Elovainio, Minna; Joutsjoki, Vesa; Paloheimo, Marja; Suominen, Pirkko; et al. (Primalco Ltd., Finland; Miettinen-Oinonen, Arja; Londesborough, John; Vehmaanperae, Jari; Haakana, Heli). PCT Int. Appl. WO 9714804 A1 19970424, 202 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1996-FI550 19961017. PRIORITY: US 1995-5335 19951017; US 1995-7926 19951204; US 1996-20840 19960628.

AB New **cellulases**, and a protein with a carbohydrate-binding domain that is synergistic for **cellulases** are described and purified from a number of species of fungi and the genes encoding them are cloned and characterized. Two forms of the enzymes with mol. wts. of approx. 20 and 50 kilodaltons have mildly acid pH optima and temperature optima of ≥60°. The enzyme may be manufactured for use in textile processing, laundry detergents and in pulp and paper processing by cultivation of the microorganism or by expression of the cloned gene in a suitable host. Uses of the enzymes in biostoning and biofinishing are demonstrated. It was found that backstaining during biostoning was a function of the enzyme rather than of the pH. Purification of the enzymes from **Melanocarpus** albomyces and cloning of the genes are described.

L7 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN

1981:600607 Document No. 95:200607 Cellulolytic activity of some thermophilic and thermotolerant fungi of Pakistan. Qureshi, M. Shabbeer Ahmad; Mirza, J. H.; Malik, K. A. (Dep. Bot., Gov. Coll., Faisalabad, Fr.). Biologia (Lahore), 26(1-2), 201-17 (English) 1980. CODEN: BILGA6. ISSN: 0006-3096.

AB Cellulolytic activity of 28 species of thermophilic and thermotolerant fungi from 274 isolates obtained from 171 samples of substrates from different parts of Pakistan was investigated by 4 methods. Nineteen species (viz., Absidia blakesleeana, A. corymbifera, Aspergillus fumigatus, A. ochraceus, A. sydowi, A. terreus, A. violaceus, Chaetomium thermophile var coprophile and dissitum,

Chrysosporium tropicum, Geotrichum candidum, Gilmaniella thermophila, Humicola griesea var thermoidea, H. insolens, **Melanocarpus** albomyces, Myceliophthora thermophilum, Papulaspora thermophila, Penicillium dupontii, and Torula thermophila were found to be cellulolytic by one or another of the methods. Nine species (Aspergillus ficuum, A. unilateraiis, Calcarisporiella thermophila, Mucor miehei, M. pusillus, M. varians, Rhizomucor pakistanicus, Rhizopus arrhizus, and Thermomyces lanuginosus proved to be noncellulolytic by all of the methods employed.

L7 ANSWER 21 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
1981:600237 Document No. 95:200237 Composition of the cellulolytic complex of thermophilic fungi. Bilai, T. I.; Musich, E. G. (Inst. Mikrobiol. Virusol., Kiev, USSR). Mikrobiologicheskii Zhurnal (1978-1993), 43(5), 615-18 (Russian) 1981. CODEN: MZHUDX. ISSN: 0201-8462.
AB Cellulolytic activity was studied in 192 strains of the following thermophilic fungi: Allescheria, Malbranchea pulchella sulfurea, **Melanocarpus** albomyces, Thermoascus aurantiacus, Corynascus sepedonium, Aspergillus fumigatus, A. niger, A. ochraceus, and A. sulfureum. The type of cellulolytic enzyme that appeared in the culture fluid depended on the fungal strain. Either exoglucanase from C. sepedonium, A. ochraceus, or A. sulfureum, endoglucanase from Allescheria, or more rarely, a complete **cellulase** complex from A. fumigatus was detected.

L7 ANSWER 22 OF 22 CAPLUS COPYRIGHT 2006 ACS on STN
1981:600236 Document No. 95:200236 Cellulolytic properties of different species of thermophilic fungi. Bilai, T. I.; Musich, E. G. (Inst. Mikrobiol. Virusol., Kiev, USSR). Mikrobiologicheskii Zhurnal (1978-1993), 43(5), 611-14 (Russian) 1981. CODEN: MZHUDX. ISSN: 0201-8462.
AB Cellulolytic activities were studied in 242 strains of obligate and facultative thermophiles of the genus Allescheria, and the species Malbranchea pulchella sulfurea, **Melanocarpus** albomyces, Thermoascus aurantiacus, Corynascus sepedonium, Aspergillus fumigatus, A. niger, A. ochraceus, A. sulfureum, and Mucor. The content of reducing substances in the filtrates of these fungi varied within the range of 0.18-0.4 mg/mL. The most active cellulolytic strains belonged to the genera Allescheria, Malbranchea, Corynascus, and Aspergillus.

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=> S THIELAVIA
L10         209 THIELAVIA

=> S L10 AND L4
L11          59 L10 AND L4

=> S L10(W)L6
L12           1 L10(W)L6

=> S L12 NOT L7
L13           1 L12 NOT L7

=> D CBIB ABS
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L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
1977:137988 Document No. 86:137988 L-Amino acid using acylase. Awao, Takeyoshi; Mitsugi, Koji (Ajinomoto Co., Inc., Japan). Jpn. Kokai Tokkyo Koho JP 52007489 19770120 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1975-82807 19750707.
AB L-Amino acids were produced by asymmetric hydrolysis of N-acyl-DL-amino acids by reacting at >50° with culture broth or cells of Chaetomium, Dactylomyces, Humicola, Malbranchea, Mucor, Papulospora, Paecilomyces, Sporotrichum,

Thermomyces, Talaromyces, Penicillium, Torula, Byssochlamys, Thielavia, Chrysosporium, Gilmaniella, or Monascus which have an acylase active at >50°. Thus, Chaetonium thermophile var. coprophile ATCC 28076 was cultured on 3 g wheat bran at 45° for 6 days. The mold bran was homogenized with 20 mL of phosphate buffer (pH 7.0) and centrifuged. The supernatant (0.5 mL) was added to a reaction mixture of 0.1 M phosphate buffer 1.5 and 0.1 M N-acetyl-DL-phenylalanine [2901-75-9] 1.0 mL and reacted at 50 or 70° for 30 min. Acylase activity was 2.2 and 5.2 units/mL/h at 50 and 70° reaction, resp.

=> S L11 NOT L12
L14 59 L11 NOT L12

=> S L14 NOT L7
L15 59 L14 NOT L7

=> D 1-59 CBIB ABS

L15 ANSWER 1 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2006:284220 Efficiency of New Fungal **Cellulase** Systems in Boosting Enzymatic Degradation of Barley Straw Lignocellulose. Rosgaard, Lisa; Pedersen, Sven; Cherry, Joel R.; Harris, Paul; Meyer, Anne S. (Novozymes A/S, Bagsvrd, DK-2880, Den.). Biotechnology Progress, 22(2), 493-498 (English) 2006. CODEN: BIPRET. ISSN: 8756-7938. Publisher: American Chemical Society.

AB This study examined the cellulytic effects on steam-pretreated barley straw of cellulose-degrading enzyme systems from the five thermophilic fungi Chaetomium thermophilum, **Thielavia** terrestris, Thermoascus aurantiacus, Corynascus thermophilus, and Myceliophthora thermophila and from the mesophile Penicillum funiculosum. The catalytic glucose release was compared after treatments with each of the crude enzyme systems when added to a benchmark blend of a com. **cellulase** product, Celluclast, derived from Trichoderma reesei and a β-glucosidase, Novozym 188, from Aspergillus niger. The enzymic treatments were evaluated in an exptl. design template comprising a span of pH (3.5-6.5) and temperature (35-65 °C) reaction combinations. The addition to Celluclast + Novozym 188 of low dosages of the crude enzyme systems, corresponding to 10 wt % of the total enzyme protein load, increased the catalytic glucose yields significantly as compared to those obtained with the benchmark Celluclast + Novozyme 188 blend. A comparison of glucose yields obtained on steam-pretreated barley straw and microcryst. cellulose, Avicel, indicated that the yield improvements were mainly due to the presence of highly active endoglucanase activity/activities in the exptl. enzyme prepns. The data demonstrated the feasibility of boosting the widely studied T. Reesei **cellulase** enzyme system with addnl. enzymic activity to achieve faster lignocellulose degradation We conclude that this supplementation strategy appears feasible as a first step in identifying truly promising fungal enzyme sources for fast development of improved, com. viable, enzyme prepns. for lignocellulose degradation

L15 ANSWER 2 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2006:273589 Cloning and sequence of laccase from **Thielavia** arenaria, and use for bleaching of denim. Paloheimo, Marja; Valtakari, Leena; Puranen, Terhi; Kruus, Kristiina; Kallio, Jarno; Mantyla, Arja; Fagerstrom, Richard; Ojapalo, Pentti; Vehmaanpera, Jari (AB Enzymes Oy, Finland). U.S. Pat. Appl. Publ. US 20060063246 A1 20060323, 55 pp. (English). CODEN: USXXCO. APPLICATION: US 2005-231706 20050921. PRIORITY: FI 2004-1220 20040921; US 2004-2004/PV611819 20040921.

AB The present invention relates to a novel laccase enzyme obtainable from the strains of genus **Thielavia**. The invention relates also to the nucleic acid sequence encoding the enzyme from **Thielavia** arenaria strain ALKO4197, the encoded amino acid sequence, a recombinant host into which the nucleic acid sequence has been introduced and a method for the production of the enzyme in a recombinant

host. The enzyme of the invention is suitable for several applications, in particular for increasing the lightness of denim.

L15 ANSWER 3 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2006:269738 Methods for preventing, removing, reducing, or disrupting biofilm by using bacterial α amylase. Deinhammer, Randy; Andersen, Carsten (Novozymes North America, Inc., USA). PCT Int. Appl. WO 2006031554 A2 20060323, 42 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2005-US31813 20050907. PRIORITY: US 2004-2004/PV608535 20040910.

AB The present invention relates to methods for preventing, removing, reducing, or disrupting biofilm present on a surface, comprising contacting the surface with an alpha-amylase derived from a bacterium.

L15 ANSWER 4 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2005:1329733 Document No. 144:68690 Methods for single-well transformation and expression screening of filamentous fungal cells with a DNA library. Teter, Sarah; Lamsa, Michael; Cheery, Joel; Ward, Connie (Novozymes, Inc., USA). PCT Int. Appl. WO 2005121351 A2 20051222, 72 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2005-US18871 20050526. PRIORITY: US 2004-2004/PV575600 20040527.

AB The present invention relates to methods for expression screening of filamentous fungal transformants. The methods comprise (a) isolating single colony transformants of a DNA library introduced into Escherichia coli; (b) preparing DNA from each of the single colony E. coli transformants; (c) introducing a sample of each of the DNA prepns. of step (b) into sep. suspensions of protoplasts of a filamentous fungus to obtain transformants thereof, wherein each transformant contains one or more copies of an individual polynucleotide from the DNA library; (d) growing the individual filamentous fungal transformants of step (c) on selective growth medium, thereby permitting growth of the filamentous fungal transformants, while suppressing growth of untransformed filamentous fungi; and (e) measuring activity or a property of each polypeptide encoded by the individual polynucleotides.

L15 ANSWER 5 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2005:823511 Document No. 143:224917 Polypeptides having cellulolytic enhancing activity and polynucleotides encoding same from Thielavia terrestris. Brown, Kimberly; Harris, Paul; Zaretsky, Elizabeth; Re, Edward; Vlasenko, Elena; McFarland, Keith; Lopez de Leon, Alfredo (Novozymes Inc., USA). PCT Int. Appl. WO 2005074647 A2 20050818, 219 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2005-US3525 20050128. PRIORITY: US 2004-2004/PV540661 20040130.

AB The present invention relates to 5 polypeptides having cellulolytic enhancing activity and isolated genomic or cDNA sequences encoding the polypeptides from **Thielavia** terrestris strain NRRL 8126. Gene models for the T. terrestris GH61B, GH61C, and GH61D genomic DNA sequences were constructed based on similarity to homologous genes from Diplodia gossypina, Trichophaea saccata, and Pseudoplectania nigrella. Hydrolysis of pretreated corn stover by Trichoderma reesei fermentation broth expressing Aspergillus fumigatus β-glucosidase was increased from 63.1% with β-glucosidase alone to 66.2% with T. terrestris GH61C addition Addition of 3.4 mg/g GH61D to 2.5 mg/g Celluclast increased cellulose conversion to glucose from 66.1% to 78.5%. Thus, the T. terrestris cellulolytic enhancing proteins are useful for the degradation of cellulosic materials in various industrial processes. The invention also relates to nucleic acid constructs, vectors, and host cells comprising the polynucleotides as well as methods for producing and using the polypeptides.

L15 ANSWER 6 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2004:602746 Document No. 141:118315 Methods of constructing and screening a DNA library of interest in filamentous fungal cells. Vind, Jesper (Novozymes A/S, Den.). U.S. US 6767701 B1 20040727, 27 pp., Cont.-in-part of U.S. Ser. No. 186,665, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1999-426038 19991025. PRIORITY: DK 1998-1375 19981026; US 1998-186665 19981104; DK 1999-718 19990525.

AB A method of constructing and screening a library of polynucleotide sequences of interest in filamentous fungal cells by use of an episomal replicating AMA1-based plasmid vector, thus achieving a high frequency of transformation and a stable and standard uniformly high level of gene expression.

L15 ANSWER 7 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2004:515623 Document No. 141:73356 Detergent composition and enzymatically improving detergency in washing fabrics. Gibson, Keith; Hansen, Lone (Novozymes A/S, Den.). PCT Int. Appl. WO 2004053039 A2 20040624, 71 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-DK844 20031210. PRIORITY: DK 2002-1898 20021211.

AB A detergent composition is provided that comprises anionic surfactant, an endoglucanase and optionally other enzymes that provides improved detergency performance through the wash. The endoglucanase is selected from the endoglucanase having a 773-amino acid sequence from Bacillus DSM 12648. The endoglucanase has an anti-redeposition effect, whereas Carezyme (a **cellulase** from Hansenula lanuginosa) does not.

L15 ANSWER 8 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2004:473102 Document No. 141:28167 Methods for eliminating the formation of biofilm. Xu, Feng (Novozymes Biotech, Inc., USA). U.S. Pat. Appl. Publ. US 2004109852 A1 20040610, 13 pp., Cont.-in-part of U.S. Ser. No. 596,795, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2001-885379 20010619. PRIORITY: US 2000-2000/596795 20000619.

AB The present invention relates to methods for preventing or removing biofilm on a surface, comprising contacting the surface with an effective amount of a

composition comprising one or more acylases and a carrier to degrade a lactone produced by one or more microorganisms, wherein the degradation of the lactone prevents or removes the biofilm.

L15 ANSWER 9 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2003:991678 Document No. 140:37106 Temperature dependent RNA splicing in a host cell. Hansen, Mogens Trier (Novozymes A/S, Den.). PCT Int. Appl. WO 2003104457 A1 20031218, 45 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-DK369 20030606. PRIORITY: DK 2002-870 20020607.

AB The present invention relates to a polynucleotide comprising conserved intron sequences required for RNA splicing in a host cell, wherein the said splicing, resulting in a correctly spliced mRNA, is temperature dependent due to secondary structure formation or hybridization of an antisense RNA.

L15 ANSWER 10 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2003:678996 Document No. 139:208805 Methods and vectors for expression of recombinant proteins and screening polynucleotide library in filamentous fungi. Stringer, Mary Ann; Schnorr, Kirk; Vind, Jesper (Novozymes A/S, Den.). PCT Int. Appl. WO 2003070956 A1 20030828, 36 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-DK106 20030218. PRIORITY: DK 2002-256 20020219.

AB Methods for screening a polynucleotide library for a polypeptide with a property of interest in a filamentous fungal host cell, in a manner which allows quick and easy subsequent characterization of the polypeptide, using an expression cloning vector comprising at least a polynucleotide encoding a selectable marker in which the translation initiation start site of the marker-encoding sequence comprises a crippled consensus Kozak sequence, a fungal replication initiation sequence, and a promoter with a cloning-site into which the library is cloned, and a transcription terminator. Enzyme, antibody, hormone and receptor are recombinantly expressed in filamentous fungi, including Acremonium, Aspergillus, Coprinus, Fusarium, Humicola, Mucor, Myceliophthora, Neurospora, Penicillium, **Thielavia**, Tolypocladium or Trichoderma.

L15 ANSWER 11 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2003:532757 Document No. 139:80161 Methods for modifying carboxyl groups of enzymes using guanidine, aromatic or amino sugar-based nucleophiles. Siddiqui, Khawar Sohail; Cavicchioli, Ricardo (Unisearch, Australia). PCT Int. Appl. WO 2003056000 A1 20030710, 108 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-AU1484 20021101. PRIORITY: AU

2001-9688 20011221.

AB The present invention relates to a modified enzyme and its modification process. The method comprises activating a carboxyl group of a side chain of an amino acid residue or carboxy terminal amino acid of said enzyme and incubating said activated enzyme with guanidine-, aromatic- or aminosugar-based nucleophile or combinations thereof for sufficient time to link an guanidine-, aromatic- or aminosugar group of said nucleophile to said enzyme.

L15 ANSWER 12 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2002:778103 Document No. 137:274045 Method for isolating manganese peroxidase sequence homologs of Ceriporiopsis subvermispora culture medium using microarrays. Yaver, Debbie; Berka, Randy (Novozymes Biotech, Inc., USA). PCT Int. Appl. WO 2002079400 A2 20021010, 65 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US9050 20020312. PRIORITY: US 2001-2001/PV275283 20010312.

AB The present invention relates to methods for isolating a gene encoding an enzyme, comprising adding a mixture of labeled first nucleic acid probes from a microbial strain cultured on medium without the substrate, and labeled second nucleic acid probes from a microbial strain cultured on medium with the substrate, to an array of random nucleic acid fragments of the microbial strain. The labeled nucleic acids hybridize to complementary sequences of the genomic fragments in the array, wherein the first nucleic acid probes are labeled with a first reporter and the second nucleic acid probes are labeled with a second reporter. The relative expression of the genes of the microbial strain is determined by the observed hybridization reporter signal of each spot in the array. A gene is isolated from the microbial strain that encodes an enzyme that degrades the substrate. The present invention also relates to isolated genes obtained by such methods.

L15 ANSWER 13 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2002:770085 Document No. 137:274093 Improved methods for producing proteins with recombinant fungi using a consensus translational initiator sequence. Yaver, Debbie S.; Bellini, Daniel Alan (Novozymes Biotech, Inc., USA). U.S. US 6461837 B1 20021008, 34 pp., Cont.-in-part of U.S. Ser. No. 451,503, abandoned. (English). CODEN: USXXAM. APPLICATION: US 2000-717847 20001120. PRIORITY: US 1999-451503 19991130.

AB The present invention relates to methods for producing a polypeptide, comprising: (a) cultivating a fungal host cell in a medium conducive for the production of the polypeptide, wherein the fungal host cell comprises a first nucleic acid sequence encoding the polypeptide operably linked to a second nucleic acid sequence comprising a consensus translational initiator sequence foreign to the nucleic acid sequence; and (b) isolating the polypeptide from the cultivation medium. The present invention also relates to the isolated consensus translational initiator sequences and to constructs, vectors, and fungal host cells comprising the consensus translational initiator sequences operably linked to nucleic acid sequences encoding polypeptides. Thus, expts. with Aspergillus oryzae to determine the optimum translational initiator sequence indicated that the sequence NYCNNBCACC (N = A,G,C,T; Y = C,T; B = A,C,T) followed by the initiation codon was optimal for this system.

L15 ANSWER 14 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2002:368941 Document No. 136:381359 High yield protein production in fungus using a crippled translational initiator sequence. Yaver, Debbie S.; Bellini, Daniel A. (USA). U.S. Pat. Appl. Publ. US 2002058304 A1

20020516, 37 pp., Cont.-in-part of U.S. Ser. No. 482,751, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2001-760139 20010112. PRIORITY: US 2000-2000/482751 20000113.

AB The present invention relates to methods for producing a polypeptide, comprising: (a) cultivating a fungal host cell in a medium conducive for the production of the polypeptide; and (b) isolating the polypeptide from the cultivation medium; wherein the fungal host cell comprises a first nucleic acid sequence encoding the polypeptide in tandem with a second nucleic acid sequence comprising a crippled translational initiator sequence operably linked to a gene encoding a selectable marker in which the 3' end of the crippled translational initiator sequence is immediately upstream of the initiator codon of the gene encoding the selectable marker, wherein the crippled translational initiator sequence comprises a T at the -3 position and a T at one or more of the -1, -2, and -4 positions, and wherein the copy number of the first nucleic acid sequence has been increased by culturing the cell under conditions that select for multiple copies of the selectable marker. The present invention also relates to nucleic acid constructs, vectors, and host cells comprising a crippled translational initiator sequence operably linked to a gene encoding a selectable marker. PBANe10 was constructed as described below to contain the TAKA/NA2-tpi leader hybrid promoter, the lipase gene from Humicola lanuginosa bordered by a PacI and SwaI site, the AMG terminator, and the full-length Aspergillus nidulans pyrG gene as a selectable marker. The nucleotide sequence upstream of the Aspergillus nidulans pyrG gene in pBANe10 is ACCGCCATCATGT with the minus 3 position containing an A nucleotide. When the nucleotides upstream of the Aspergillus nidulans pyrG gene were further changed to a more crippled translational initiator (pBANe10-1-4), there was a significant increase in expression of the Humicola lanuginosa lipase gene. As shown in Table 2, the copy number of the Humicola lanuginosa lipase gene increased, similar to the expression of lipase, when the nucleotides upstream of the selectable marker (Aspergillus nidulans pyrG gene) were changed from the wild type sequence (pBANe10) to a crippled translational initiator sequence (pBANe10-1-4).

L15 ANSWER 15 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2001:935527 Document No. 136:74255 Methods for eliminating the formation of biofilm. Xu, Feng (Novozymes Biotech, Inc., USA). PCT Int. Appl. WO 2001098214 A1 20011227, 30 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US19646 20010619. PRIORITY: US 2000-2000/596795 20000619.

AB The present invention relates to methods for preventing or removing biofilm on a surface, comprising contacting the surface with an effective amount of a composition comprising one or more acylases and a carrier to degrade a lactone produced by one or more microorganisms, wherein the degradation of the lactone prevents or removes the biofilm.

L15 ANSWER 16 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2001:526207 Document No. 135:117903 Method for constructing expression cassette for high protein yield. Yaver, Debbie S.; Bellini, Daniel A. (Novozymes Biotech, Inc., USA). PCT Int. Appl. WO 2001051646 A2 20010719, 60 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM,

CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US1102 20010112. PRIORITY: US 2000-482751 20000113.

AB The invention provides methods of constructing expression cassettes for high production of a protein comprises a first nucleotide sequence encoding the protein in tandem with a second nucleotide sequence comprising a crippled promoter sequence operably linked to a gene encoding a selectable marker, wherein the copy number of the first nucleotide sequence has been increased by culturing the cell under conditions that select for multiple copies of the selectable marker. The invention also provides methods for producing proteins comprising: (a) cultivating the fungal host cell in a medium conducive for the high yield of the protein which has a crippled promoter sequence upstream of its gene; and (b) isolating the protein from the cultivation medium. The present invention also relates to such fungal host cells and methods for obtaining such fungal host cells. The present invention further relates to DNA constructs and vectors comprising a crippled promoter sequence operably linked to a gene encoding a selectable marker.

L15 ANSWER 17 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2001:417170 Document No. 135:29841 Translational initiator sequences for production of proteins with recombinant fungi. Yaver, Debbie S.; Bellini, Daniel Alan (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 2001040489 A1 20010607, 67 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US31910 20001120. PRIORITY: US 1999-451503 19991130.

AB The present invention relates to methods for producing a polypeptide, comprising: (a) cultivating a fungal host cell in a medium conducive for the production of the polypeptide, wherein the fungal host cell comprises a first nucleic acid sequence encoding the polypeptide operably linked to a second nucleic acid sequence comprising a consensus translational initiator sequence foreign to the nucleic acid sequence; and (b) isolating the polypeptide from the cultivation medium. The present invention also relates to the isolated consensus translational initiator sequences and to constructs, vectors, and fungal host cells comprising the consensus translational initiator sequences operably linked to nucleic acid sequences encoding polypeptides. Thus, expts. with Aspergillus oryzae to determine the optimum translational initiator sequence indicated that the sequence NYCNNBCACC (N = A,G,C,T; Y = C,T; B = A,C,T) followed by the initiation codon was optimal for this system.

L15 ANSWER 18 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2001:338697 Document No. 134:362193 High throughput screening using combinations of screening methods to increase efficiency. Pedersen, Henrik; Hansen, Peter Kamp; Kongsbak, Lars; Moeller, Soeren (Novozymes A/S, Den.). PCT Int. Appl. WO 2001032858 A1 20010510, 110 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-DK567 20001010. PRIORITY: DK 1999-1604 19991105.

AB A method for high throughput screening that uses a combination of screening methods in series is described. The first screen is one that can rapidly

identify candidates in a large population, e.g. a substrate reloading assay, and candidates are then passed on to a second more selective assay that works on small populations. Preferred assays include: FACS-based assays, array-based screens, colony picking assays, substrate replacement assays and substrate reloading assays. A number of assays for nucleases and proteases that can be adapted to high throughput screening of phage display libraries or in fluorescence-activated cell sorting are described.

L15 ANSWER 19 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2001:338677 Document No. 134:337939 A method of screening cell populations. Pedersen, Henrik; Kristensen, Hans-Henrik; Vind, Jesper; Hansen, Peter Kamp; Lamsa, Michael; Noerregaard-Madsen, Mads (Novozymes A/S, Den.). PCT Int. Appl. WO 2001032834 A1 20010510, 43 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-DK565 20001010. PRIORITY: DK 1999-1601 19991105.

AB A method of screening a large population of variant cells or cell colonies present on a first surface, which cells or colonies may be capable of producing a useful polypeptide, RNA or small mol., which method comprises the steps of (i) on the first surface, subjecting the cells or cell colonies to an assay correlated to a property of the useful polypeptide, RNA or small mol.; (ii) by means of a colony picker, selecting cells having the property from the first surface; and (iii) transferring the selected cells to a second surface.

L15 ANSWER 20 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2001:265575 Document No. 134:294659 Preparation and uses of spray dried enzyme products containing biomass. Topp-Jorgensen, Jorgen; Jacobsen, Carsten; Hansen, Kim Uhre; Jorgensen, Anders; Oftelund, Dan; Bach, Poul; Sondergaard, Gustav Borup (Novozymes A/S, Den.). PCT Int. Appl. WO 2001025411 A1 20010412, 49 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-DK535 20000929. PRIORITY: DK 1999-1415 19991001; DK 2000-251 20000217.

AB The invention relates to a particle comprising an enzyme and a biomass, to a process for preparing a particle comprising spray drying an enzyme and biomass containing fermentation broth starting material, to obtain a solid particle comprising an enzyme and a biomass and to a process for preparing an enzyme containing particle comprising spray drying an aqueous enzyme containing liquid starting material to obtain a spray dried first enzyme containing particle and subsequently subjecting the first dry particle to a process selected from granulation and coating and combinations thereof to obtain a second dry enzyme containing particle. The present invention provides simple and cost effective processes for producing dry enzyme particles having good properties.

L15 ANSWER 21 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2000:688381 Document No. 133:262354 Strong promoters from Fusarium for expression of foreign genes in a fungal host. Berka, Randy M.; Rey, Michael W.; Brown, Kimberly; Brown, Stephen H. (Novo Nordisk Biotech,

Inc., USA). PCT Int. Appl. WO 2000056900 A2 20000928, 104 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US7815 20000322. PRIORITY: US 1999-274449 19990322.

AB A set of six strong promoters that can be used to express foreign genes in fungal cells is described. The promoters are from the glucoamylase, Daria and Quinn genes of Fusarium venenotum and may be used in the manufacture of proteins on a com. scale. The genes were identified as strongly expressed in the bulk sequencing of cDNA libraries during a screen for a glucoamylase cDNA. The genes corresponding o the cDNAs were cloned and the promoter regions identified. High level expression of a number of genes using these promoter regions is demonstrated.

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2000:608886 Document No. 133:203847 Oxaloacetate hydrolase gene from Aspergillus niger and its knockout for deficient fungal host cells. Hjort, Carsten Mailand; Pedersen, Henrik (Novo Nordisk A/S, Den.). PCT Int. Appl. WO 2000050576 A1 20000831, 71 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-DK67 20000218. PRIORITY: DK 1999-231 19990222.

AB The present invention relates to isolated nucleic acid sequences encoding polypeptides having oxaloacetate hydrolase activity. Oxaloacetate hydrolase (EC 3.7.1.1) from Aspergillus niger was purified, peptide fragments were sequences, and the gene cloned and characterized. Disruption of the oxaloacetate hydrolase gene yields a oxalate-neg. strain for fermentative production of recombinant products. The invention also relates to nucleic acid constructs, vectors, and host cells comprising the nucleic acid sequences as well as recombinant methods for producing the polypeptides.

L15 ANSWER 23 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

2000:553707 Document No. 133:149274 Manufacture of foreign proteins in filamentous fungi using hosts with altered responses to medium pH to limit proteinase levels. Yaver, Debbie S. (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 2000046375 A2 20000810, 72 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US2864 20000202. PRIORITY: US 1999-241955 19990202.

AB A method of manufacturing foreign proteins in filamentous fungi or yeasts that limits the synthesis of the proteinases involved in the pH response signal transduction chain of the hosts is described.n the mutant cell comprises a first nucleic acid sequence comprising a modification of. The hosts carry a mutation in one or more genes of a pacC pH signal transduction pathway or homologs thereof. The integration site of a lipase gene transgenic Aspergillus oryzae that was a high producer of the lipase was characterized and found to be in the

palB gene encoding a component of the pH signal transduction chain. Integrative disruption of the palB gene decreased extracellular proteinase production by a factor of 10. Cloning and use of the palA gene is also demonstrated.

L15 ANSWER 24 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2000:493694 Document No. 133:130762 Methods for producing polypeptides in cyclohexadepsipeptide-deficient cells. Berka, Randy M.; Rey, Michael W.; Yoder, Wendy T. (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 2000042203 A2 20000720, 76 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US913 20000113. PRIORITY: US 1999-229862 19990113.

AB The present invention relates to methods for producing a heterologous polypeptide, comprising: (a) cultivating a mutant of a parent filamentous fungal cell under conditions conducive for the production of the heterologous polypeptide, wherein (i) the mutant cell comprises a nucleic acid sequence encoding the heterologous polypeptide and (ii) the mutant produces less of the cyclohexadepsipeptide than the parent filamentous fungal cell when cultured under the same conditions; and (b) isolating the heterologous polypeptide from the cultivation medium. The present invention also relates to mutants of filamentous fungal cells and methods for obtaining the mutant cells. The present invention also relates to isolated cyclohexadepsipeptide synthetase from Fusarium venenatum ATCC 20334 and isolated nucleic acid sequences encoding the cyclohexadepsipeptide synthetase. The present invention also relates to nucleic acid constructs, vectors, and host cells comprising the nucleic acid sequences as well as methods for producing the cyclohexadepsipeptide synthetases. The present invention further relates to cyclohexadepsipeptides produced by the cyclohexadepsipeptide synthetases.

L15 ANSWER 25 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
2000:291226 Document No. 132:319501 Methods of constructing and screening a DNA library of interest in filamentous fungal cells. Vind, Jesper (Novo Nordisk A/s, Den.). PCT Int. Appl. WO 2000024883 A1 20000504, 81 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-DK552 19991013. PRIORITY: DK 1998-1375 19981026; DK 1999-718 19990525.

AB The invention provides a method of constructing and screening a library of polynucleotide sequences of interest in filamentous fungal cells by use of an episomal replicating AMA1-based plasmid vector, thus achieving a high frequency of transformation and a stable and standard uniformly high level of gene expression.

L15 ANSWER 26 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1999:764228 Document No. 132:9636 Methods for producing a polypeptide by modifying the copy number of a gene. Yaver, Debbie S. (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9961651 A2 19991202, 78 pp. DESIGNATED STATES: W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ,

BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US11816 19990527. PRIORITY: US 1998-85505 19980527.

AB The present invention relates to methods for producing a polypeptide, comprising: (a) cultivating a mutant cell under conditions conducive for production of the polypeptide, wherein (i) the mutant cell is related to a parent cell, which parent cell comprises at least 2 tandem copies of a nucleic acid sequence encoding the polypeptide or a nucleic acid sequence encoding the polypeptide, which nucleic acid sequence comprises repeat sequences at the 5' and 3' ends of the nucleic acid sequence, by the introduction of a nucleic acid construct into the genome of the parent cell at a locus which is within or not within the nucleic acid sequence(s), wherein the introduction of the nucleic acid construct into the locus modifies the copy number of the nucleic acid sequence(s) and the modification of the copy number is not a result of selective pressure; and (ii) the mutant cell produces more or less of the polypeptide than the parent cell when both cells are cultivated under the same conditions; and (b) recovering the polypeptide from the cultivation medium. The present invention also relates to methods for obtaining a mutant cell and mutant cells. When the Humicola lanuginosa Lipolase gene is cloned into Aspergillus oryzae, the loss or gain of copy nos. correlated well with either a decrease or an increase in lipase expression.

L15 ANSWER 27 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1999:753359 Document No. 132:935 Methods for producing heterologous polypeptides in trichothecene-deficient filamentous fungal mutant cells. Royer, John C.; Christianson, Lynne M.; Gambetta, Gregory A.; Brody, Howard; Otani, Suzanne M.; Yoder, Wendy T. (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9960137 A2 19991125, 98 pp. DESIGNATED STATES: W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US11223 19990520. PRIORITY: US 1998-82217 19980520.

AB The present invention relates to methods for producing a polypeptide, comprising: (a) cultivating a mutant of a parent filamentous fungal cell under conditions conducive for the production of the polypeptide, wherein (i) the mutant cell comprises a first nucleic acid sequence encoding the polypeptide and a second nucleic acid sequence comprising a modification of at least one of the genes involved in the production of a trichothecene and (ii) the mutant produces less of the trichothecene than the parent filamentous fungal cell when cultured under the same conditions; and (b) isolating the polypeptide from the cultivation medium. The present invention also relates to mutants of filamentous fungal cells and methods for obtaining the mutant cells. The present invention also relates to isolated trichodiene synthases and isolated nucleic acid sequences encoding the trichodiene synthases. The invention also relates to nucleic acid constructs, vectors, and host cells comprising the nucleic acid sequences as well as methods for producing the trichodiene synthases. The present invention further relates to mutants cells comprising a marker-free modification of a gene, and methods for obtaining and using such mutant cells. Construction of vectors such as pJRoy36 are described to obtain expression of Thermomyces lanuginosus xylanase in Fusarium venenotum. Xylanase production was grown with phosphinothricin resistance selection. Deletion strains of Fusarium venenotum tri5 gene were also created.

L15 ANSWER 28 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1999:753358 Document No. 132:9622 Aspergillus DDC2 and DDC3 genes sequences and their use for enhanced protein production in mutant cells of filamentous fungi. Wahleithner, Jill; Christensen, Tove (Novo Nordisk

Biotech, Inc., USA; Novo Nordisk A/s). PCT Int. Appl. WO 9960136 A1 19991125, 78 pp. DESIGNATED STATES: W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US10689 19990514. PRIORITY: US 1998-79601 19980515; US 1998-79344 19980515.

AB The present invention relates to methods for enhanced protein production, comprising (a) cultivating a mutant of a parent filamentous fungal cell in a nutrient medium suitable for production of the protein, wherein (i) the mutant cell comprises a first nucleic acid sequence encoding the protein of interest and a modification of one or more of second nucleic acid sequences encoding DDC2 and/or DDC3 proteins, and (ii) the mutant cell produces more of the protein than the parent cell when cultured under the same conditions; and (b) recovering the protein from the nutrient medium of the mutant cell. The present invention also relates to the DDC2 and DDC3 proteins cDNA and genomic sequences, and nucleic acid constructs, recombinant expression vectors, and host cells comprising the sequences. The present invention further relates to mutants of filamentous fungal cells and methods for obtaining the mutant cells.

L15 ANSWER 29 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1999:622223 Document No. 131:256405 Manufacture of foreign proteins with recombinant cells prepared by directed insertion of expression cassettes. Brody, Howard; Yaver, Deborah S.; Lamsa, Michael; Hansen, Kim (Novo Nordisk Biotech, Inc, USA). U.S. US 5958727 A 19990928, 130 pp., Cont.-in-part of U.S. Ser. No. 713,312, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1997-928692 19970912. PRIORITY: US 1996-713312 19960913.

AB A method of manufacturing proteins using cellular, especially fungal, expression hosts carrying expression cassettes integrated into the host genome is described. Integration of the expression cassette is directed to avoid interfering with selectable markers or functions essential to successful expression of the foreign gene, preferably using restriction enzyme-mediated integration. This method also allows the rescue of plasmids and their flanking sequences from transformants showing high level expression of the gene, e.g. to develop more generally useful integrating expression vectors. The use of the method to develop Aspergillus oryzae hosts expressing the lipase gene of Humicola lanuginosa is described. One high-level expression vector was shown to integrate into a gene for a protein showing similarities to glucose transporters, another integrated into the palB gene. Integration into palB affected the ability of the host to grow at alkaline pH. Integration of the transforming DNA into a superoxide dismutase gene made the transformants sensitive to paraquat. Some insertions gave rise to morphol. mutants that were useful in fermentation because they were easier to aerate than the wild type and gave higher yields.

L15 ANSWER 30 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1998:761795 Document No. 130:24392 Production of protein hydrolyzates with glycine aminopeptidases. Blinkovsky, Alexander; Brown, Kimberly; Golightly, Elizabeth; Byun, Tony; Mathiansen, Thomas E.; Kofod, Lene V.; Fujii, Mikio; Marumota, Chigusa (Novo Nordisk Biotech, Inc., USA; Novo Nordisk A/S; Asahi Chemical Industry Co., Ltd.). PCT Int. Appl. WO 9851163 A2 19981119, 84 pp. DESIGNATED STATES: W: AL, AU, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LU, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US9998 19980515. PRIORITY: US 1997-857886 19970516; US 1997-62893 19971020; US 1997-69719 19971216; DK 1997-1465 19971216.

AB The present invention relates to methods of producing protein hydrolyzates, comprising adding to a proteinaceous material one or more aminopeptidase(s) having glycine releasing properties and one or more addnl. proteases wherein the amount of glycine produced is greater than the amount of glycine produced by the one or more addnl. proteases alone under the same conditions.

L15 ANSWER 31 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1998:640355 Document No. 129:256006 Preparation and use of respiratory-deficient cells as expression hosts for the manufacture of foreign proteins. Jensen, Ejner Bech; Cherry, Joel R.; Elrod, Susan L. (Novo Nordisk A/S, Den.; Novo Nordisk Biotech, Inc.). PCT Int. Appl. WO 9841640 A1 19980924, 57 pp. DESIGNATED STATES: W: AL, AU, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LU, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US5156 19980317. PRIORITY: US 1997-819458 19970317.

AB A method of using respiratory deficiency mutants as markers for the stabilization of plasmid DNA in a eukaryotic expression host is described. The host is transformed with an expression construct that carries a gene that complements the mutation and the gene of interest. If the transforming DNA is lost, then growth under conditions requiring respiration leads to poor growth and loss of the unstable transformants. The method is intended for use with filamentous fungi, such as Aspergillus, and yeasts. Methods for disrupting a gene in a respiratory-deficient mutant cell are also described. The hemA and hemB genes for aminolevulinate synthase and porphobilinogen synthase of Aspergillus oryzae were cloned using the hemA gene of Aspergillus nidulans as a probe and by PCR using primers derived from known sequences of hemB genes. A disruption vector that introduced the pyrG gene into the hemA was constructed and used to generate heme-deficient, respiration-deficient mutants. The mutation could be rescued by supplementation of the medium with 5-aminolevulinic acid or hemin and the mutant could be rescued by transformation with a wild-type hemA gene.

L15 ANSWER 32 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1998:197598 Document No. 128:254595 **Cellulase** variants with altered sensitivity to anion tensides and pH activity profiles. Andersen, Kim Vilbour; Schulein, Martin; Christiansen, Lars; Damgaard, Bo (Novo Nordisk A/S, Den.; Andersen, Kim Vilbour; Schulein, Martin; Christiansen, Lars; Damgaard, Bo). PCT Int. Appl. WO 9812307 A1 19980326, 115 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-DK393 19970917. PRIORITY: DK 1996-1013 19960917.

AB A method for improving the properties of a cellulolytic enzyme by amino acid substitution, deletion, or insertion comprises 7 steps: (a) constructing a multiple alignment of at least 2 amino acid sequences known to have 3-dimensional structures similar to endoglucanase V (EGV) from Humicola insolens known from Protein Data Bank entry 4ENG; (b) constructing a homol.-built 3-dimensional structure of the cellulolytic enzyme based on the structure of the EGV; (c) identifying amino acid residue positions present in a distance from the substrate binding cleft of not more than 5 Å; (d) identifying surface-exposed amino acid residues of the enzyme; (e) identifying all charged or potentially charged amino acid residue positions of the enzyme; (f) choosing one or more positions wherein the amino acid residue is to be substituted, deleted, or where an insertion is to be provided; (g) carrying out the substitution, deletion or insertion by using conventional protein engineering techniques. Humicola insolens endoglucanase V

variants include those in which the variant has an Ala, Ser, or Thr residue at position 5 in the catalytic core domain; a Phe or Tyr at position 8; a Phe, Trp, or Tyr at position 9; an Asp at position 10; and an Asp at position 121. A variant of **Thielavia** terrestris **cellulase** with His-119 substituting for Gln was also prepared The variants have altered sensitivity to anion tensides (commonly used in detergents), thermostability, and altered pH activity profiles. They have applications for laundry detergents, pulp and paper processing, or degradation of plant material (cell walls).

L15 ANSWER 33 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1998:183996 Document No. 128:269587 Manufacture of foreign proteins with fungal expression hosts prepared by directed insertion of expression cassettes. Brody, Howard; Yaver, Deborah S.; Lamsa, Michael H.; Hansen, Kim (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9811203 A1 19980319, 196 pp. DESIGNATED STATES: W: AL, AU, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-US16604 19970912. PRIORITY: US 1996-713312 19960913.

AB A method of manufacturing proteins using fungal expression hosts carrying expression cassettes integrated into the host genome is described. Integration of the expression cassette is directed to avoid interfering with selectable markers or functions essential to successful expression of the foreign gene, preferably using restriction enzyme-mediated integration. This method also allows the rescue of plasmids and their flanking sequences from transformants showing high level expression of the gene, e.g. to develop more generally useful integrating expression vectors. The use of the method to develop Aspergillus oryzae hosts expressing the lipase gene of Humicola lanuginosa is described. One high-level expression vector was shown to integrate into a gene for a protein showing similarities to glucose transporters, another integrated into the palB gene. Integration into palB affected the ability of the host to grow at alkaline pH. Integration of the transforming DNA into a superoxide dismutase gene made the transformants sensitive to paraquat. Some insertions gave rise to morphol. mutants that were useful in fermentation because they were easier to aerate than the wild type and gave higher yields.

L15 ANSWER 34 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1998:42498 Document No. 128:98568 Modification of cryptic splice sites genes intended for expression in filamentous fungal hosts. Thompson, Sheryl Ann (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9749821 A1 19971231, 59 pp. DESIGNATED STATES: W: AL, AU, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-US10630 19970620. PRIORITY: US 1996-20930 19960627.

AB Methods of identifying splice sites recognized in a filamentous fungal expression host but not in the organism from which the gene is derived (cryptic splice sites) and of substituting these splice sites with sequences that do not function as splice sites are described. This eliminates aberrant splicing and ensures synthesis of a functional gene product. Splice sites are identified by comparing sequences of cDNAs of the mature mRNAs derived from expression of the gene in the parent source and from the fungal host, or by comparing amino acid sequences of proteins from the natural and the transgenic host. Cryptic splice sites are then replaced with non-consensus splice sites with a (G+C) content not consistent with a splice site (.apprx.50%). The method is demonstrated by identifying cryptic splice sites in the gene for green fluorescent protein of Aequoria victoria.

L15 ANSWER 35 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1997:499246 Document No. 127:158949 Identification of morphological mutants of filamentous fungi and their development as hosts for secretory expression of foreign genes. Shuster, Jeffrey R.; Royer, John C. (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9726330 A2 19970724, 37 pp. DESIGNATED STATES: W: AL, AU, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-US829 19970117. PRIORITY: US 1996-10238 19960119; US 1996-726114 19961004.

AB Methods of identifying morphol. mutants of filamentous fungi for use as hosts for secretory manufacture of foreign proteins are described. Expression vectors for use with filamentous fungi are described. A number of morphol. mutants of Aspergillus were generated and assayed for their ability to secrete Lipolase after transformation with a plasmid carrying the gene for the enzyme. Two mutants showing increased levels of secretion of the enzyme were identified.

L15 ANSWER 36 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1997:159095 Characterization of fungal **cellulases** for fiber modification.. Schulein, M.; Lange, L.; Lassen, S. F.; Kaupinen, M. S.; Andersen, L. N.; Klysner, S.; Nielsen, J. B. (Novo Nordisk A/S, Bagsvaerd, DK 2880, Den.). Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17, CELL-052. American Chemical Society: Washington, D. C. (English) 1997. CODEN: 64AOAA.

AB Monocomponent recombinant fungal **cellulases** have recently been introduced in textile and detergent industry. Via cloning from many fungal sources we have obtained a wide range of **cellulases** from family 5,6,7,12 and 45. Family 45 (EGV) is the most aggressive; family 7 (EGI) the least aggressive endoglucanase. EGV **cellulases** were found in more than 50 fungal sources, eg. Myceliophthora, **Thielavia** and Acremonium. Their properties were compared with EGV from Humicola insolens. They all showed color clarification in detergent and good abrasion on denim. The performance of EG I from Fusarium, Myceliophthora and Humicola is alike: very little tensile strength loss and only little abrasion; only loose microfibrils are removed. These enzymes can be applied in detergents (particular soil removal), for stone washing (backstain control), or in deinking of used paper.

L15 ANSWER 37 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1996:718350 Document No. 126:3771 Mol. screening and PCR cloning of novel endoglucanases from fungi for use as detergents, textile treatment, and paper pulp processing. Schuelein, Martin; Andersen, Lene Nonboe; Lassen, Soeren Flensted; Kauppinen, Markus Sakari; Lange, Lene; Nielsen, Ruby Ilum; Ihara, Michiko; Takagi, Shinobu (Novo Nordisk A/s, Den.). PCT Int. Appl. WO 9629397 A1 19960926, 406 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1996-DK105 19960318. PRIORITY: DK 1995-272 19950317; DK 1995-885 19950808; DK 1995-886 19950808; DK 1995-887 19950808; DK 1995-888 19950808; DK 1996-137 19960212.

AB Cellulolytic enzymes (endoglucanases, **cellulases**) were isolated from such fungi as Myceliophthora thermophila, Acremonium, **Thielavia** terrestris, Macrophomina phaseolina, Crinipellis scabella, Volutella colletotrichoides, and Sordaria fimicola. The cDNAs for the enzymes were isolated characterized by mol. screening and PCR cloning using degenerate, deoxyinosine-containing oligonucleotide primers corresponding to 4 highly conserved amino acid regions

found in known amino acid sequences, and DNA constructs containing the cDNAs were used to express the enzymes in transformed Aspergillus oryzae or A. niger. The enzyme prepns. consist essentially of an enzyme having cellulolytic activity and comprise a first amino acid sequence of 14 residues having the sequence Thr-Arg-X3-X4-Asp-Cys-Cys-X8-X9-X10-Cys-X12-Trp-X14, in which X3 and X4 independently is Trp, Tyr or Phe; X8 is Arg, Lys or His; each of X9, X10, X12 and X13 is any of the 20 naturally occurring amino acid residues; and a second amino acid sequence of 5 residues having the sequence Trp-Cys-Cys-XX4-Cys in which XX4 is any of the 20 naturally occurring amino acid residues with the proviso that, in the first amino acid sequence, (i) when X12 is Ser, then X14 is not Ser, and (ii) when X12 is Gly, then X14 is not Ala. Gene fusions were also constructed between endoglucanases from Myceliophthora thermophila, Macrophomina phaseolina, and Crinipellis scabella and the linker/cellulose-binding C-terminal region of the endoglucanase from Humicola insolens. The enzymes perform excellently in detergent, laundering, textile, and papermaking pulp applications. PCR-facilitated detection of cellulolytic enzymes and their cDNA sequences are also described from 46 filamentous and monocentric fungi representing 32 genera.

L15 ANSWER 38 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1996:256737 Document No. 124:281115 Thermophilic fungal expression system resulting in lower viscosity and higher productivity for protein or enzyme production by tank fermentation. Jensen, Ejner Bech; Boominathan, Karuppan Chettier (Novo Nordisk Biotech, Inc., USA). PCT Int. Appl. WO 9602653 A1 19960201, 40 pp. DESIGNATED STATES: W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TT, UA, UG, UZ, VN; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1995-US8676 19950712. PRIORITY: US 1994-278473 19940720.

AB The present invention relates to recombinant thermophilic host cells comprising a nucleic acid sequence encoding a heterologous protein, and a method of producing recombinant protein utilizing same. The recombinant hosts of the present invention provide a better morphol. in tank fermns. than many known fungal host cells, such as Aspergillus, which morphol. results in lower viscosity levels, and therefore improved productivity.

L15 ANSWER 39 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1995:738746 Document No. 123:136726 Production and characterization of **cellulases** and xylanases from the thermophilic ascomycete **Thielavia** terrestris 255b. Gilbert, Michel (Univ. of Ottawa, Ottawa, ON, Can.). 243 pp. Avail. Univ. Microfilms Int., Order No. DANN93618 From: Diss. Abstr. Int. B 1995, 56(1), 216 (English) 1992.

AB Unavailable

L15 ANSWER 40 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1995:422057 Document No. 122:234037 Isolation and properties of a thermostable endoglucanase from a thermophilic mutant strain of **Thielavia** terrestris. Kvesitadze, Edisher G.; Lomitashvili, Tamara B.; Khutsishvili, Maia P.; Lamed, Raphael; Bayer, Edward A. (Inst. Plant Biochem., Tbilisi, 380059, Georgia). Applied Biochemistry and Biotechnology, 50(2), 137-43 (English) 1995. CODEN: ABIBDL. ISSN: 0273-2289. Publisher: Humana.

AB A heat-stable enzyme was isolated from the **cellulase** complex of a thermophilic strain of the micromycete **Thielavia** terrestris. The purified enzyme exhibited both endoglucanase and xylanase activities and had a mol mass of 69,000 Daltons and an isoelec. point of 6.4. When the cells were grown at 48°C, the initial activity of the purified enzyme using CM-cellulose as a substrate was 150 nkat/mg and the Michaelis constant was 6.6 g/L. The heat stability of the enzyme was high, losing only 20% of the initial activity after a 6-h incubation at 65°C.

When cultures were grown on microcryst. cellulose and xylose was added after 48 h of growth, endoglucanase and xylanase activities were more than doubled. Similar increases in these activities were observed by growing the cultures on straw.

L15 ANSWER 41 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1992:506880 Document No. 117:106880 Characterization of the enzymes present in the **cellulase** system of **Thielavia** terrestris 255B. Gilbert, Michel; Breuil, Colette; Saddler, J. N. (Biotechnol. Chem. Dep., Forintek Canada Corp., Ottawa, ON, K1G 3Z5, Can.). Bioresource Technology, Volume Date 1992, 39(2), 147-54 (English) 1991. CODEN: BIRTEB. ISSN: 0960-8524.
AB A study of the **cellulases** from the thermophilic fungus T. terrestris 255B was initiated to see how they compared with enzymes derived from mesophilic fungi such as Trichoderma. To try to obtain maximum production of a complete **cellulase** system, the fungus was first grown on a variety of soluble and insol. substrates. As well as assaying the culture filtrates for **cellulase** activity and protein concentration, the enzyme profiles were compared using nondenaturing electrophoretic techniques (IEF and native-PAGE). The separation by native-PAGE and IEF was followed by activity staining methods to detect endoglucanase and xylanase activities. Native-PAGE could not be used to determine accurately the Mr of the **cellulases** because of possible differences in mass/charge ratios. Bands with apparent Mr values above 200,000 were reproducibly detected. This suggested that the various **cellulase** components may be organized into high mol. weight complexes.

L15 ANSWER 42 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1990:154151 Document No. 112:154151 The **cellulase** complex of the thermophilic ascomycete, **Thielavia** terrestris: production, mutation, and characterization of the component enzymes. Zitomer, Stephanie W. (UMDNJ, Rutgers, State Univ., New Brunswick, NJ, USA). 314 pp. Avail. Univ. Microfilms Int., Order No. DA8923634 From: Diss. Abstr. Int. B 1990, 50(7), 2762-3 (English) 1989.
AB Unavailable

L15 ANSWER 43 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1987:510456 Document No. 107:110456 A method for production of biologically active proteins containing disulfide bonds; selection of appropriate host cells and construction of expression vectors. Garvin, Robert T.; James, Eric (Cangene Corp., Can.). Eur. Pat. Appl. EP 222279 A2 19870520, 33 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1986-115148 19861031. PRIORITY: CA 1985-494456 19851101.
AB A method for producing biol. active proteins containing SS bonds is described. A prokaryotic or eukaryotic host cell is selected which contains high levels of SS-interchange enzyme (DIE) activity and which naturally excretes SS bond-containing proteins. The gene for 1 of these cystine-containing excreted proteins is identified and its regulatory region is used to construct a plasmid which may be used to clone, express, and secrete a protein having desired enzymic, immunogenic, hormonal, or structural properties. A Streptomyces griseus strain had high DIE activity and excreted a cystine-containing protease. A genomic library constructed from BamHI DNA fragments and pBR322 was used in the identification of the protease-encoding DNA. The plasmid containing this sequence (pCG6) may be used to express and secrete heterologous proteins in this microorganism.

L15 ANSWER 44 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1987:419772 Document No. 107:19772 **Cellulase** screening by iodine staining: an artefact. Zitomer, S. W.; Eveleigh, D. E. (Cook Coll., Rutgers State Univ., New Brunswick, NJ, 08903, USA). Enzyme and Microbial

Technology, 9(4), 214-16 (English) 1987. CODEN: EMTED2. ISSN: 0141-0229.

AB Hydrolysis zones visualized by iodine (KI/I2) staining of cellulose-agar media after growth of Trichoderma reesei QM6a, RUT C30, QM9136 (**cellulase** neg.) or **Thielavia** terrestris cultures, or incubation of crude endoglucanases and amylases, were due primarily to degradation of a small amount of starch contaminant in com. agar and not to cellulolysis as recently suggested. No zones were evident when amylase-digested agar or Gelrite was used as the gelling agent or when purified cellobiohydrolase and endoglucanase were used. **Cellulase** screening free from artifacts was best obtained by growing cultures on acid-swollen or crystalline cellulose with Gelrite as optimal gelling agent, followed by incubation at elevated temperature to enhance visualization of hydrolysis zones while restricting fungal growth, but without addnl. staining.

L15 ANSWER 45 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1986:605850 Document No. 105:205850 Production and localization of **cellulases** and β-glucosidase from the thermophilic fungus **Thielavia** terrestris. Breuil, C.; Wojtczak, G.; Saddler, J. N. (Biotechnol. Chem. Dep., Forintek Canada Corp., Ottawa, ON, K1G 3Z5, Can.). Biotechnology Letters, 8(9), 673-6 (English) 1986. CODEN: BILED3. ISSN: 0141-5492.

AB The production and localization of enzymes in T. terrestris strains C464 and NRRL 8126 were compared and the optimum temperature and pH for **cellulase** activity were determined High levels of intracellular β-glucosidase activity were detected in the former strain. The intracellular β-glucosidase of both strains were more thermostable than the extracellular enzyme; the half life of T. terrestris (C464) endoglucanase activity at 60° was >96 h.

L15 ANSWER 46 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1986:513540 Document No. 105:113540 Optimization of fermentation conditions for thermostable **cellulase** production by **Thielavia** terrestris. Margaritis, Argyrios; Merchant, Rosemina F. (Dep. Chem. Biochem. Eng., Univ. West. Ontario, London, ON, N6A 5B9, Can.). Journal of Industrial Microbiology, 1(3), 149-56 (English) 1986. CODEN: JIMIE7. ISSN: 0169-4146.

AB Of the 18 different C sources, Solka-Floc was optimal for the induction of **cellulase** [**9012-54-8**] by the thermophilic fungus T. terrestris. The temperature optimum for growth was 44-52°. Maximum volumetric productivity (6.07 IU/L-h) of filter paper activity was achieved when the pH was controlled at 4.5-5.0.

L15 ANSWER 47 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN

1986:441289 Document No. 105:41289 Manufacture of **cellulases**. Takazawa, Seigo; Kawamori, Mikio (New Fuel Oil Development Technology Research Assoc., Japan). Jpn. Kokai Tokkyo Koho JP 61078384 A2 19860421 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-202372 19840927.

AB **Cellulases** (endo-β-glucanase, exo-β-glucanase, β-glucosidase) are produced by cultivation of **cellulase** -producing Trichoderma, Thielovia, or Sporotrichum species in a culture medium containing L-sorbose. As an example, T. reesi X-31 was cultivated on a potato dextrose agar slant medium at 25° for 7 days, and the spores formed were cultivated in a medium (in 300L flask) containing L-sorbose 10, KH2PO4 2, (NH4)2SO4 1, polypeptone 1, yeast extract 0.5, MgSO4.7H2O 0.3, CaCl2.2H2O 0.3, Tween 80 1 g, trace metal mixts. (H3BO3 6, (NH4)2MO7O24.7H2O 26, FeCl3.6H2O 100, CuSO4.5H2O 40, MnCl2.4H2O 8, and ZnCl2 200 g/100 mL) 1 h, and 50 mM tartaric acid buffer and ion-exchanged H2O to 1L (pH 4.0) at 28° for 1 day and then shake-cultured in the same medium (in 2L flask) at 28° for 1 day. The culture filtrate contained endo-β-glucanase, exo-β-glucanase, and β-glucosidase at 15, 1.2 and 0.10 unit/mL, resp. compared to only trace amts. for a cultivation in the media containing glucose but no L-sorbose.

L15 ANSWER 48 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1986:183081 Document No. 104:183081 **Cellulase** production by species of Acrophialophora and **Thielavia.** Sandhu, D. K.; Arora, D. S. (Dep. Biol., Guru Nank Dev Univ., Amritsar, 143 005, India). Indian Phytopathology, 38(2), 267-9 (English) 1985. CODEN: IPHYAU. ISSN: 0367-973X.

AB Acrophialophora fusispora, A. nainiana, **Thielavia** sepedonium, And T. terricola, isolated from decomposing Dalbergia bark, were tested for their cellulolytic activity. T. terricola Was the best in terms of dry weight produced on cellulose. In all fungi except A. fusispora the amount of **cellulase** produced was almost at the same level and comparable to the known cellulolytic fungus Chaetomium cellulolyticum.

L15 ANSWER 49 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1985:610737 Document No. 103:210737 Growth and cellulolytic activity of thermophilic fungi in media with nonspecific substrates. Bilai, T. I.; Musich, E. G.; Syrchin, S. A. (Inst. Mikrobiol. Virusol., Kiev, USSR). Mikrobiologicheskii Zhurnal (1978-1993), 47(5), 62-8 (Russian) 1985. CODEN: MZHUDX. ISSN: 0201-8462.

AB Thermophilic (Malbranchea pulchella var sulfurea, Corynascus sepedonium, and **Thielavia** species 17) and mesophilic (Trichoderma lignorum) fungi were able to grow and synthesize **cellulases** in media containing carbohydrates, polyhydric alcs., or surfactants as the sole source of C and energy. These substrates produced either inhibitory or stimulatory effects on growth and enzyme production as compared with the specific substrates (filter paper and CMC). Glucose inhibited endoglucanase formation by 42-75%. Tween 60 lowered cellobiase activity in M. pulchella and C. sepedonium, but increased endoglucanase I activity in **Thielavia** species 17. The results indicate the semiconstitutive character of **cellulases** in thermophilic fungi.

L15 ANSWER 50 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1985:610580 Document No. 103:210580 Composition of the **cellulase** complex in certain species of thermophilic fungi. Bilai, T. I.; Musich, E. G.; Syrchin, S. A. (Inst. Mikrobiol. Virusol., Kiev, USSR). Mikrobiologicheskii Zhurnal (1978-1993), 47(5), 57-62 (Russian) 1985. CODEN: MZHUDX. ISSN: 0201-8462.

AB **Cellulase** production was studied in 3 thermophilic fungi (**Thielavia** species, Malbranchea pulchella var sulfurea, Corynascus sepedonium) and 1 mesophilic strain (Trichoderma lignorum). All strains were able to utilize soluble (cellobiose, carboxymethylcellulose) and insol. (filter paper, cotton fiber) substrates as well as cellulose materials, such as wheat straw and wheat husk. Soluble cellulose induced high activity of endoglucanases I and II in **Thielavia.** Insol. cellulose induced the synthesis of all components of the **cellulase** complex in M. pulchella var sulfurea and T. lignorum. With carboxymethylcellulose, the activity of **cellulases** of thermophiles was higher than that of T. lignorum, and the activity of cellobiase of C. sepedonium was 2-fold higher than that of T. lignorum.

L15 ANSWER 51 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1985:109434 Document No. 102:109434 Enzymological studies on litter-colonizing ascomycetes. Aneja, K. R. (Dep. Bot., Kurukshetra Univ., Kurukshetra, India). Proceedings of the Indian National Science Academy, Part B: Biological Sciences, 49(6), 735-9 (English) 1983. CODEN: PIBSBB. ISSN: 0073-6600.

AB Cellulolytic (C1 and Cx), pectolytic (endo-polygalacturonase [PG] and polygalacturonate trans-eliminase [PGTE]) and lignolytic abilities of 5 litter-colonizing ascomycetes were compared in vitro. Maximum **cellulase** (Cx) activity was shown by Chaetomium erectum and **Thielavia** sepedonium. In Achaetomium strumarium and **Thielavia** minor Cx production was adaptive in nature while in C.

globosum, C. erectum, and T. sepedonium it was constitutive. **Cellulase** (Cx) activity was stimulated in the latter 3 fungi by CM-cellulose. Maximum **cellulase** (C1) activity was shown by C. erectum but no activity was exhibited by T. minor. Test species of Chaetomium did not show any PG and PGTE activity. Brown color reaction with tannic acid was shown by A. strumarium, C. globosum, and C. erectum, and all the 5 test fungi utilized p-hydroxybenzaldehyde.

L15 ANSWER 52 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1985:58218 Document No. 102:58218 Production and thermal stability characteristics of **cellulase** and xylanase enzymes from **Thielavia** terrestris. Margaritis, Argyrios; Merchant, Rosnina (Fac. Eng. Sci., Univ. West. Ontario, London, ON, N6A 5B9, Can.). Biotechnology and Bioengineering Symposium, Volume Date 1983, 13(Symp. Biotechnol. Fuels Chem., 5th, 1983), 299-314 (English) 1984. CODEN: BIBSBR. ISSN: 0572-6565.

AB The production and thermal stability characteristics of **cellulase** and xylanase enzymes from a thermophilic fungus, T. terrestris were investigated. In addition, the enzymic hydrolysis of wheat straw at high temps. was examined A β-glucosidase activity of 0.9 I.U./mL was found in the culture filtrate, and this enzyme retained 80% of its original activity after 40 h of exposure to 60°. Hydrolysis of a 6.8% wheat-straw suspension yielded 26.4% saccharification within 6-8 h at 64°. The advantage of using thermostable **cellulases** and xylanases for the hydrolysis are discussed.

L15 ANSWER 53 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1984:205494 Document No. 100:205494 Comparative study of **cellulases** and hemicellulases from four fungi: mesophiles Trichoderma reesei and Penicillium sp. and thermophiles **Thielavia** terrestris and Sporotrichum cellulophilum. Durand, Henri; Soucaille, Philippe; Tiraby, Gerard (Lab. Rech., CAYLA, Toulouse, 31400, Fr.). Enzyme and Microbial Technology, 6(4), 175-80 (English) 1984. CODEN: EMTED2. ISSN: 0141-0229.

AB The enzymes produced by 2 thermophilic fungi claimed to produce heat-stable **cellulases** (EC 3.2.1.4) were compared with those of 2 mesophilic fungi on the basis of the following criteria: polysaccharolytic spectrum, heat and pH effects on stability and on activity of the different enzymes, and the ability to hydrolyze raw natural substrates. The **cellulases** produced by 1 of the thermophiles, S. cellulophilum, appeared to be as heat-labile as those from the mesophile, Trichoderma reesei; moreover, the former enzyme preparation was the least efficient of the 4 tested. **Thielavia** terrestris Enzymes were the most thermostable; on the basis of the other properties tested, **Thielavia** terrestris enzymes were comparable to, or in some cases better than, those from mesophilic strains. However, the differences were not so great as to compensate for the much lower productivity of **Thielavia** terrestris compared to the improved Trichoderma reesei and Penicillium species strains.

L15 ANSWER 54 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1983:195056 Document No. 98:195056 Regulatory mechanisms in **Thielavia** terrestris. Tuse, D.; Hokama, L. (Biotechnol. Res. Dep., SRI Int., Menlo Park, CA, USA). Report, DOE/ER/10697-T1; Order No. DE83002858, 37 pp. Avail. NTIS From: Energy Res. Abstr. 1983, 8(6), Abstr. No. 13134 (English) 1982.

AB T. terrestris Is a filamentous ascomycete originally discovered and identified as Allescheria terrestris by Apinis (1963). Strain S-16 was isolated from a soil sample in California and found to grow at temps. as high as 50°. The fungus produces a complete **cellulase** system that enables it to degrade native, crystalline cellulose to glucose. The enzymes display high heat and pH stability and an optimum temperature for hydrolysis of 65°, making it attractive for the eventual com. conversion of cellulose into fuel and chemical The enzyme activity of T. terrestris S-16, the effects of medium composition and C source on enzyme production, the growth of the organism at different temps., the extracellular

aryl-β-glucosidase activity as a function of incubation temperature, the effects of small-mol.-weight metabolic regulators and membrane-active antibiotics of the cell-associated and extracellular enzyme levels, and the methods used in an attempt to find plasmids are reported.

L15 ANSWER 55 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1982:577438 Document No. 97:177438 Method for determining the transforming activity of micromycete **cellulases**. Bilai, T. I.; Musich, E. G. (Inst. Mikrobiol. Virusol., Kiev, USSR). Mikrobiologicheskii Zhurnal (1978-1993), 44(4), 75-6 (Russian) 1982. CODEN: MZHUDX. ISSN: 0201-8462.
AB The difficulties associated with determining **cellulase** (fungi cultivation on cellulose-containing substrates, determination of biomass, study of metabolites during culturing, etc.) are discussed, together with a new method which uses fungi growth on protein-N in a sample. To a tube with 5-10 mL nutrient medium (Czapek-basal or modified), not containing a C source, was added a definite portion (50-100 mg) of insol. cellulosic substrate-filter paper strip (no N), chaff (0.2 mg N/g), or cotton husks 0.5 mg N/g, and the tube was incubated with a fungal conidial suspension at a temperature depending on the type of fungi (mesophilic, 27°; facultative thermophilic, 37°; or obligatory thermophilic, 40-42°). The contents were filtered, the fungal mycelia and substrate residue were washed with 0.01M acetate buffer (pH 4.5), and N was determined in the residue by the Kjeldahl method.

L15 ANSWER 56 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1981:440816 Document No. 95:40816 **Cellulase** formation by molds grown on cellulose-containing substrates. Okunev, O. N.; Bilai, T. I.; Musich, E. G.; Golovlev, E. L. (Inst. Biochem. Physiol. Microorg., Pushchino, USSR). Prikladnaya Biokhimiya i Mikrobiologiya, 17(3), 408-14 (Russian) 1981. CODEN: PBMIAK. ISSN: 0555-1099.
AB Cultivation of Trichoderma lignorum, Allescheria terrestris, Allescheria species, **Thielavia** sepedonium, and Aspergillus species in a mineral medium containing natural substrates (straw, birch sawdust, and cotton stems) resulted in the accumulation of Cx **cellulase**, C1 **cellulase** [37329-65-0], endo-1,4-β-glucanase [9012-54-8], and cellobiase [9001-22-3] in the medium. The composition of cellulolytic enzymes was not different from that obtained with purified cellulose prepns.

L15 ANSWER 57 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1980:636959 Document No. 93:236959 **Cellulase** enzymes from **Thielavia** terrestris. Skinner, Wilfred Aubrey; Takenishi, Shigeyuki (SRI International, USA). Ger. Offen. DE 3013627 19801016, 20 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1980-3013627 19800409.
AB **Cellulase** [9012-54-8] enzymes, predominantly β-glucosidase [9001-22-3], is produced by fermentation of a glycerol [56-81-5]-containing medium with **Thielavia** terrestris. Thus, a preculture of T. terrestris was inoculated into 100 mL medium containing KH2PO4 6.8, (NH4)2SO4 1.3, MgCO3.7H2O 0.5, CaCl2 0.2, cellulose 1, peptone 0.5, corn steep liquor 0.5, glycerol 5 g and trace element solution 2 mL/L and incubated at 48° for 48 h with shaking. The yield was 5 times greater in medium containing glycerol than in medium without glycerol.

L15 ANSWER 58 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1979:591379 Document No. 91:191379 Enzyme and its production. Skinner, Wilfred Aubrey; Tokuyama, Fumitake (SRI International, USA). Brit. GB 1546544 19790523, 8 pp. (English). CODEN: BRXXAA. APPLICATION: GB 1977-6943 19770218.
AB A **cellulase** [9012-54-8] preparation having both C1 and Cx activities was isolated from **Thielavia** terrestris fermns. E.g., T. terrestris NRRL 8126 was maintained at pH 5.5-5.6 at 48° on a medium containing cellulose powder 10, peptone 1.5, and corn steep liquor 2.0 g/L plus mineral element solns. After 46

h the C1 **cellulase** activity, determined using the filter paper test, was 12.0 mg glucose/mL enzyme and the Cx activity, determined using the CM-cellulose test, was 89.0 mg glucose/mL enzyme.

L15 ANSWER 59 OF 59 CAPLUS COPYRIGHT 2006 ACS on STN
1978:440886 Document No. 89:40886 **Cellulase** by a thermophilic **thielavia** terrestris. Skinner, Wilfred A.; Tokuyama, Fumitake (Stanford Research Institute, USA). U.S. US 4081328 19780328, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1976-721535 19760908.

AB A thermostable cellulose [9004-34-6] is produced by culturing T. terrestris in a cellulose-containing medium. Thus, T. terrestris was cultured in a medium containing KH_2PO_4 6.8, $(NH_4)_2SO_4$ 1.3, $MgSO_4 \cdot 7H_2O$ 0.5, $CaCl_2$ 0.2, peptone 1.5, corn steep liquor 2, cellulose powder 10 g/L, and trace element solution 2 mL/L at 48° with aeration. The pH was maintained at 5.5-5.6. At 40.5 h, C1 and Cx activities reached maximum

	L #	Hits	Search Text	DBs
1	L1	8041	CELLULASE	US-PGPUB; USPAT
2	L2	43	MELANOCARPUS	US-PGPUB; USPAT
3	L3	482	THIELAVIA	US-PGPUB; USPAT
4	L4	46	ALBOMYCES	US-PGPUB; USPAT
5	L5	398	L1 AND (L2 OR L3)	US-PGPUB; USPAT
6	L6	230	L1 SAME (L2 OR L3)	US-PGPUB; USPAT
7	L7	24	L2 ADJ L4	US-PGPUB; USPAT
8	L8	8	L3 ADJ L4	US-PGPUB; USPAT
9	L9	27	L7 OR L8	US-PGPUB; USPAT
10	L10	26	L9 AND L1	US-PGPUB; USPAT
11	L11	10	BIOSTON$	US-PGPUB; USPAT
12	L12	15	BIOFINISH$	US-PGPUB; USPAT
13	L13	22121	WOOD NEAR4 (PLUP OR FIBER)	US-PGPUB; USPAT
14	L14	12655	ANIMAL ADJ FEED	US-PGPUB; USPAT
15	L15	937	(L11 OR L12 OR L13 OR L14) AND L1	US-PGPUB; USPAT
16	L16	3	(L11 AND L12 AND L13 AND L14) AND L1	US-PGPUB; USPAT
17	L17	30846	WOOD NEAR4 (PULP OR FIBER)	US-PGPUB; USPAT

18	L18	3	(L11 AND L12 AND L17 AND L14) AND L1	US-PGPUB; USPAT

	L #	Hits	Search Text	DBs
19	L19	19	L11 OR L12	US-PGPUB; USPAT
20	L20	16	L19 AND L1	US-PGPUB; USPAT
21	L21	626	L17 AND L1	US-PGPUB; USPAT
22	L22	741	L14 AND L1	US-PGPUB; USPAT
23	L23	119	L17 SAME L1	US-PGPUB; USPAT
24	L24	126	L14 SAME L1	US-PGPUB; USPAT